

NOVEMBER 13, 1937

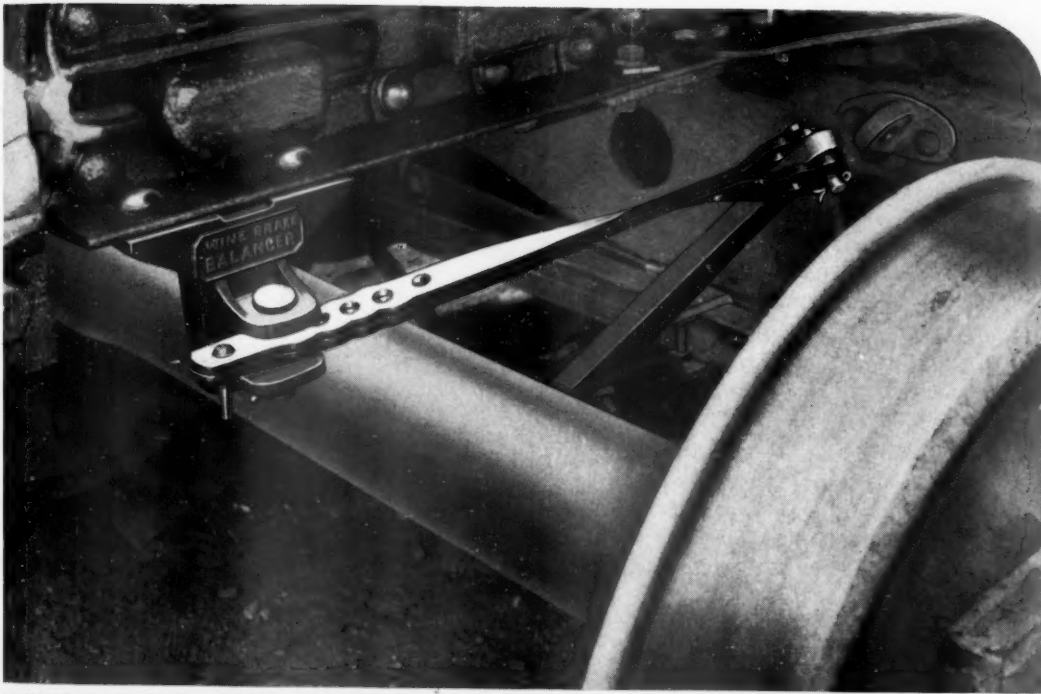
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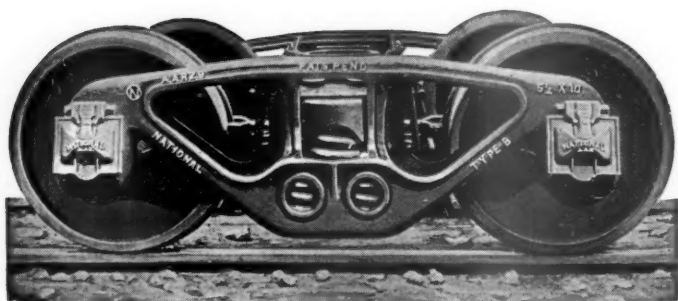
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Vol. 103

November 13, 1937

No. 20

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# "STOP THIEF"



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the crossing stops were being made. Aside from minimizing the theft of coal, the automatic interlockings saved the cost of stopping trains over the four crossings. The resultant saving paid for the interlockings in less than two years.

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# The Week at a Glance

**CARLOADINGS:** In the October 30 week freight carloadings totaled 772 thousand, 5.3 per cent under the corresponding week last year.

**AUGUST NET DOWN:** Class I railroads in August earned net income of 6½ millions as compared with almost 21 millions in August last year. For the eight months, however, net was better than 61 millions as compared with about 17½ millions for the first two-thirds of 1936.

**BIG DIESEL DELIVERED:** The Electro-Motive Corporation has delivered to the Union Pacific the world's largest Diesel-electric locomotive — 5,400 hp. — which will be used to haul the new streamlined "City of Los Angeles". A companion Diesel, of equal power, will pull the new "City of San Francisco", now under construction.

**EMPLOYMENT OFF AGAIN:** Railway employment at the middle of October totaled 1,116,000 as compared with 1,133,000 at the middle of September—maintenance of way forces sustaining the greatest proportional decline, over 6 per cent.

**O. & W. TRUSTEE:** The I.C.C. in a split decision this week reaffirmed its previous finding that one trustee was enough for the New York, Ontario & Western, and refusing to authorize Vincent Dailey, prominent in New York Democratic politics, to serve as co-trustee with F. E. Lyford, who has been in charge of the property for the past four months. Commissioner Mahaffie dissented, being joined by Commissioners Miller and Porter.

**I.C.C. NEWS "LEAK"?:** The Senate sub-committee investigating railway finance last week put into its record a letter purporting to show that Commissioner Meyer had informed a T. & P. officer of an I.C.C. decision before the decision was published. Commissioner Meyer did not recall the particular case, but said that such information was occasionally made available to interested parties in uncontested cases.

**1920 A PARALLEL?:** The "revenue" rate case of 1920 provides an interesting parallel to the railroads' present effort to secure a general increase in rates—and the similarities of the circumstances are set forth in the leading editorial herein. Then, as now, operating expenses and wages had been greatly increased largely as a result of government policies. Then, as now, the railroads were forced to look to general rate increases to provide them with needed revenue. And on that occasion the I.C.C. granted increases in freight and passenger rates, those of the former ranging from 25 to 40 per cent—or far more than the roads are now seeking.

**TRUCK RATE PARLEY:** Eastern trucking interests met in New York on November 8 to discuss a proposed horizontal rate increase to parallel the in-

creases the railroads are seeking—but definite action was not decided upon. A committee was appointed to confer with western and mid-western truckers next Monday to find out how they stand on the proposal. The I.C.C. has authorized South-western truckers to take preliminary steps toward general rate increases.

**PRECASTING FOR VIADUCTS:** When railway bridge engineers turned to concrete as a substitute for wood in pile trestles they resorted to a slavish imitation of the wood structure. It remained for F. E. Bates, bridge engineer of the Missouri Pacific, to revolutionize practice by using three large concrete piles per bent instead of five or six piles of the sizes used in wood structures. In this issue, Mr. Bates tells how he carried this idea still further in building precast concrete tower legs for high viaducts.

**FLAY PUBLIC RAILWAYS:** An analysis of government operation of railways as revealed in countries where it prevails is presented in a book just published under the authorship of P. Harvey Middleton, secretary of the R. B. A., while Dr. L. C. Sorrell is the author of a study of the tendencies at work in America which might lead to public ownership and operation of the railroads. The two books are reviewed in a feature article in this issue.

**TURBINE LOCO DESIGN:** A new detailed design for a turbine locomotive, developed by the committee on steam turbine locomotives of the Railway Fuel and Traveling Engineers Association, is described in an article herein.

**RATE HEARINGS SET:** The railroads' application for increased rates has been docketed by the I.C.C. as "Ex Parte 123" and has set November 29 as the date for the opening of public hearings. Meantime the Commission has set up a new division to hear the case.

**W. C. HOPE DIES:** The veteran—and venerated—secretary of the American Association of Passenger Traffic Officers, retired passenger traffic manager of the Jersey Central, died on a special train on November 6 while en route to Miami, Fla., for the convention of the passenger association.

**HALL COUNSELS COURAGE:** Deeply critical of railway managements' "lack of courage" in conceding wage raises at a critical time such as this, Fitzgerald Hall, president of the N. C. & St. L., praised the passenger officers this week at their Miami convention for their fearlessness and persistence in going out for business—and getting it—after it seemed that passenger traffic was done for. Four other railway chief executives joined the passenger officers in their discussion, reported herein, of outstanding developments in this growing and vital sphere of railroading.

**FIRE LOSSES REDUCED:** An analysis of the principal causes of fires on the railroads and means of preventing them is presented in the report of the meeting of the Fire Prevention Association elsewhere in this issue. Increasing attention to preventive measures, it is pointed out, has reduced annual railway fire losses from 12 millions a quarter-century ago to 3½ millions last year.

**LOCOMOTIVES:** The Milwaukee is inquiring informally for seven steam locomotives and the Reading has ordered eight Diesel-electric switchers.

**MORE ORDERS:** The Burlington has ordered 11 stainless steel, lightweight passenger cars, the Lackawanna is inquiring for 500 hopper cars and the Southern Pacific plans to buy 75,000 tons of rail.

**NEW STREAMLINER:** The Reading will get its new lightweight, steam stream-line train from the builder (Budd) within the next few days and will exhibit the train for a couple of weeks before placing it in service between Philadelphia and Jersey City. An exhibit illustrating the history and manufacture of stainless steel has been set up by the Budd Company in Reading Terminal, Philadelphia.

**NEW HAVEN REOPENS:** Hearings on the reorganization of the New Haven were resumed by Commissioner Mahaffie at Washington this week. Five different groups of security holders have plans which they are pushing, which plans indicate the existence of somewhat less than complete harmony.

**UP TO UNCLE SAM:** If the federal government wants "co-ordination" of transportation, then the first step is up to him, said Dr. C. S. Duncan in an address this week, reported in part herein. And that first step must be to cease the building of transport facilities which are not needed and which wastefully duplicate with more expensive forms of transportation efficient agencies already in existence, which are more than adequate to handle all available traffic.

**WANT COUNTY RAILWAY:** Commuters in Southern Westchester County, New York, are availing for legislation which would permit purchase and operation by the county of the rapid transit electric line—the New York, Westchester & Boston, service on a portion of which has already been suspended and operation of the remainder of the line scheduled to stop by January 1 unless some way can be found of reducing costs.

**JERSEY TAXES:** The New Jersey railroads have appealed to a three-judge federal circuit court at Philadelphia an adverse decision of the federal district court at Trenton in their effort to escape allegedly excessive taxation.



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GENERAL OFFICES  
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# How Much Railway Buying?

From the standpoints of the railways and the manufacturing industry the important questions regarding the petition that the railways have presented to the Interstate Commerce Commission for permission to make advances in rates are:

First, how soon the Commission will render a decision.

Second, how large an advance in rates it will authorize.

Third, how large an increase in net operating income will result.

Fourth, how large an increase in railway buying the resulting increase in net operating income will cause.

### "Revenue" Case of 1920 a Precedent

The present case is more analogous to the great rate advance case decided by the Commission late in July, 1920, than to any other proceeding that has ever been before it. The railways had been returned from government to private operation at the end of February, 1920. Their operating expenses had increased under government operation much more than their earnings because of advances in wages and prices that had been relatively much greater than the advance made in their rates. In addition in May the Railroad Labor Board had granted a further large advance in wages. General increases were authorized in both passenger and freight rates, the latter ranging from 25 to 40 per cent. The total increase in annual earnings it was estimated they would cause was \$1,550,000,000. The first petitions in the 1920 case were filed in the latter part of April and the decision was made in the latter part of July—only three months later.

The current proceeding is both similar and dissimilar in its causes to that of 1920. It has been preceded, as was the one in 1920, by large advances in prices and wages; but while the one in 1920 was merely preceded by inadequate advances in rates, the present one has been preceded within recent years by large reductions of rates. The \$507,000,000 annually involved in the present proceeding is less than one-third as much as was involved in the 1920 case. The present proceeding, like that of 1920, is strictly a "revenue" proceeding—that is, it is intended solely to provide the railways with imperatively needed increases in earnings.

If the procedure followed in 1920 should be followed

in the present case, as the railways will seek to have done, a final decision would be rendered within three months, or early in February. It is, however, more conservative to assume that whatever advances are authorized will be in full effect at least throughout the last three quarters of 1938.

### How Large Advances in Rates are Probable?

There does not seem any reason for anticipating that the Commission will refuse to grant approximately all the advances proposed. Present average revenue per passenger mile of 1.8 cents is the lowest in recorded history, and the advances in passenger rates sought are small and would make the average only 1.99 cents, or lower than in any year before 1934. The proposed advance of 15 per cent in freight rates would make average revenue per ton-mile only about what it was in 1930. Wholesale prices of commodities now average as high as in that year, and, therefore, the proposed advance in rates would merely re-establish the parity between freight rates and commodity prices that existed in 1930. It does not seem probable that many large industries will oppose this. Those that do will be embarrassed by questions regarding how they can justify their own current prices. For example, in August, 1937, coal cost the railways an average of \$2.49 per ton. This was higher than in August, 1930, when it was \$2.34, or even than in August, 1929, when it was \$2.41. The coal mining industry would find it difficult to justify both present prices of coal and opposition by it to an advance in freight rates.

As the current general level of commodity prices affords no justification for opposition to an advance in freight rates, the Commission seems likely to give paramount or almost exclusive consideration, as it did in 1920, to the revenue needs of the railways, which obviously are very great and warrant all the advances proposed.

### Effect on Net Operating Income

On the basis of August results the *Railway Age* estimated that subsequent to October 1, when the last wage advance went into effect, the net operating income earned by the railways would be on an annual basis of about \$430,000,000, or 1.66 per cent on property investment. Since then the Commission has



granted a freight rate advance of about \$47,000,000 a year; but there also has been a further decline of traffic. These two changes being opposite in their tendencies, there seems no reason as yet for changing the estimate made on the basis of August results, which shows the railways plainly and imperatively need a large increase in their net operating income that can be secured in the near future only by advances in rates. Assuming a traffic in 1938 equal to that of 1936, and that the advances in rates authorized will be in effect during only three quarters of 1938, they will amount in 1938 to about \$380,000,000 if all the advances proposed are authorized; to about \$253,000,000 if only two-thirds of the advances proposed are authorized; and to about \$190,000,000 if only one-half of the advances proposed are authorized.

Therefore, the granting of all the advances proposed would make net operating income in 1938 about \$810,000,000, or about \$60,000,000 less than in 1930, when it produced an average return on property investment of 3.3 per cent; while granting of only two-thirds of the advances proposed would make net operating income in 1938 about \$683,000,000, and granting of only one-half of them would make it only about \$620,000,000. These estimates are, of course, rough approximations, and assume no radical changes in traffic or operating costs during the next year.

#### Will Rate Advances Divert Traffic?

The argument often has been made that an advance in railway freight rates would divert traffic to competing carriers, especially to carriers by highway. The *Railway Age* repeatedly has contended that it would be less likely to have this effect now than at any time for some years because carriers by highway have had large increases in their costs which make them anxious to advance their rates. This view has been vindicated by the action of an association of truckers in the Middle Atlantic states in already petitioning the Interstate Commerce Commission for authority to make an advance of 15 per cent in their rates. Their example probably will be followed by truckers in other parts of the country, with the result that present differentials between rates by railway and highway will be maintained and that any advance in railway rates made will cause virtually no loss of traffic to the railways and will, therefore, increase their freight earnings in proportion to the advance in rates.

Statistics compiled by the *Railway Age* demonstrate, as repeatedly has been pointed out in these columns, that the amount of buying of equipment and materials done by the railways from the manufacturing industry is determined over periods of years, and even almost from year to year, by the net operating income they earn—that, in fact, the net operating income earned and the amount of such buying done are approximately the same. In an accompanying table are given statistics showing the net operating income earned and the

amount of buying done from the manufacturing industry during the last eight years and eight months.

#### Net Operating Income and Railway Buying

The total net operating income earned in the four years 1929-1932, inclusive, was \$2,972,503,000, and the

	Net Railway Operating Income (000)	Total buying from Manu- facturers (000)	Per cent Purchases to Net Operat- ing Income
1929 .....	\$1,251,698	\$1,427,611	114.1
1930 .....	868,879	875,752	100.8
1931 .....	525,628	487,881	92.8
1932 .....	326,298	271,076	83.1
Totals 4 years .....	2,972,503	3,062,320	103.0
Annual Averages .....	743,126	765,580	103.0
1933 .....	474,296	273,342	57.6
1934 .....	462,652	464,154	100.3
1935 .....	499,819	402,778	80.6
1936 .....	667,347	760,617	114.0
1937 (First 8 months) .....	408,217	615,146	150.7
Totals 4 yrs. and 8 mos. ....	2,512,331	2,516,037	100.1
Annual Averages .....	538,433	539,228	100.1
Totals 8 yrs. and 8 mos. ....	5,484,834	5,578,357	101.7
Annual Averages 8 yrs. and 8 mos. ....	633,352	644,182	101.7

amount of buying from the manufacturing industry was \$3,062,320,000, or 3 per cent greater. In the four years and eight months from January 1, 1933, to September 1, 1937, the net operating income earned was \$2,512,331,000, and the amount of buying from the manufacturing industry was one-tenth of one per cent greater, or \$2,516,037,000. During the entire period of eight years and eight months the amount of buying from the manufacturing industry exceeded the net operating income earned by 1.7 per cent, the former being \$5,485,000,000, or \$633,000,000 annually, and the latter \$5,578,000,000, or \$644,000,000 annually. The conclusively demonstrated relationship over periods of years between net operating income and railway buying makes it practicable to predict with approximate accuracy what effect any given increase or decrease in the former will have upon the latter. The total amount of railway buying of equipment and materials in 1938 will be about the same as the net operating income earned, and the advance in rates will increase buying by just about the same number of dollars as it increases the net operating income.

#### Railway Buying in 1938

Railway buying of equipment and materials amounted in 1936 to \$761,000,000. It increased 34 per cent in the first two-thirds of 1937, but undoubtedly will show a decline in the last one-third which will make it about the same for the entire year as in 1936. If the Commission should authorize all the advances in rates that the railways are seeking and they should be in full effect during the last three quarters of 1938, the total buying of equipment and materials done by the railways next year would be approximately \$800,000,000—less than in 1930, but more than in 1936 or 1937. If only two-thirds of the advances sought should be granted total buying of equipment and materials next year probably would be about \$680,000,000, or about the

same as in 1936 and 1937. If only one-half of the advances in rates sought should be authorized railway buying in 1938 would be only about \$600,000,000.

### Responsibility of Commission

It is of vital importance to the public that the railroads, instead of reducing their buying of equipment and materials, shall largely increase it. As shown in an editorial in the *Railway Age* of November 6, the number of locomotives and freight cars they have is still declining; and if they are unable to increase their buying soon it will be a matter of only a short time—less than a year if general business begins to expand again—until they will become incapable not only of rendering improved service, but even enough service to meet the demands of commerce. If they are long unable even to maintain their buying their withdrawal in large measure from the steel, lumber, ore and other

markets will have an increasingly adverse effect upon general business—as, indeed, it already is having.

There are several large railway systems that are still financially able to maintain or even increase their buying, and recent developments indicate that they will do so because they need to, because of some declines of prices and of opportunities to get earlier deliveries and because of the prospective advance in rates. Whether the railways as a whole will soon be able largely to increase, instead of having to continue to reduce, their buying will be determined by how soon the Interstate Commerce Commission decides the rate case and by how large advances in rates it authorizes to be made.

We confidently believe the Commission will act promptly and in accordance with the view that the public interest imperatively demands an early and large increase in railway earning, employing and buying power.

### Co-ordination Will Follow Sound Policy

Much of the expenditure made by the government for the development of highways and inland waterways has only served to increase duplicate agencies of transportation without creating their own new traffic and has made co-ordination of such agencies increasingly difficult, Dr. C. S. Duncan, economist, Association of American Railroads, said in a speech delivered November 8 at a luncheon of the Atlanta (Ga.) Traffic Club.

"The federal government alone," Dr. Duncan continued, "has expended since 1920 three and one-half billions of dollars on highways, three-quarters of a billion on waterways, and other millions on airways. Expenditures by federal, state and local governments on new facilities of transportation are as much as the railroads have expended in the previous ninety years."

Dr. Duncan cited as an example the efforts that are being made for the proposed improvement out of government funds of the Trinity river in Texas. "The potential traffic via the waterway," he said, "is estimated at from one and three-quarters to four million tons of freight per year to be diverted from existing agencies. What are these existing agencies? Thirteen rail routes between the points offer available rail service; five alternative highway trunk lines serve the same region; four trunk pipe lines, with feeding lines leading in from the various outlying fields, also serve this territory. There is an air route between the cities. The capacity of all the existing transportation facilities cannot be known, but there are figures for the railroads—2,857 miles of road are involved. In 1934 the percentage of actual tonnage to potential tonnage capacity via rail was about 7.4 per cent.

"Under such conditions, how can there be co-ordination? Where shall we begin? The only place to begin is at the foundation and build from the ground up. No private capital would add to these existing facilities. No private corporation has yet anywhere in the country dared to undertake the full responsibility of constructing, maintaining and operating an improved waterway, a commercial highway or a commercial air line. It is the government that has created the duplicating and competing agencies of transportation and new facilities. If we want co-ordination that has any reason or sense to it, this cannot go on. Facilities ought not to be created that are not to be used. Their usefulness is an economic problem. Before they are created they should be economically justified.

"Today the greatest surplus of facilities is found along the lines of heaviest traffic. Everybody has wanted a slice of fat. No one has sought the thin traffic lines. When railroads want to abandon branch lines, communities object; not alone to retain the taxes from railroad property but also on the basis that they would not have adequate service without them. And yet one reason for abandonment is the diversion of traffic to other agencies. The commission that controls rail abandonment had nothing to do about their development, has had no control over location, type, cost or design of the highways or waterways, or over the kind of service that shall be offered by them. Co-ordination cannot be had through the manipulation of one agency out of five.

"I have no valid argument against a policy which will not give any agency everything it may ask for. There should always be some economic pressure on business, as on individuals, as a spur to more vigorous effort, continued improvement and progressive policies. The rail carriers are no exception. But it occurs to me that businessmen should give consideration to one important fact. There is no more essential element in business recovery than a sustained activity in the heavy-goods industries, and there is no agency through which a stimulus in this field would be more widely effective, more soundly justified, more inspiring of confidence, more conducive to better service, more beneficial, finally, to every interest and every section, than adequate revenues to rail carriers. The building industry may be equally important.

"We want co-ordination to come out of all this. We can have it only on one condition—that we co-ordinate our attitude, our treatment, our development of these agencies. This co-ordination requires the application of the same economic principles to each, so that each shall stand flatfooted upon its own economic legs, paying all costs, meeting all requirements, facing all tests of usefulness. We cannot have co-ordination by keeping these five great transport agencies in different, airtight compartments.

"The essential thing lacking in an approach to reasonable co-ordination, which is really competitive co-ordination or co-ordinated competition, is a comprehensive, unified and consistent national policy reaching down through regulation, service, facilities to the grass roots, with fair treatment for all."

# Novel Concrete Towers Support Steel Girders

Missouri Pacific adapts idea of the 24-in. trestle pile to tall bents, generally embodying precast members

By F. E. Bates

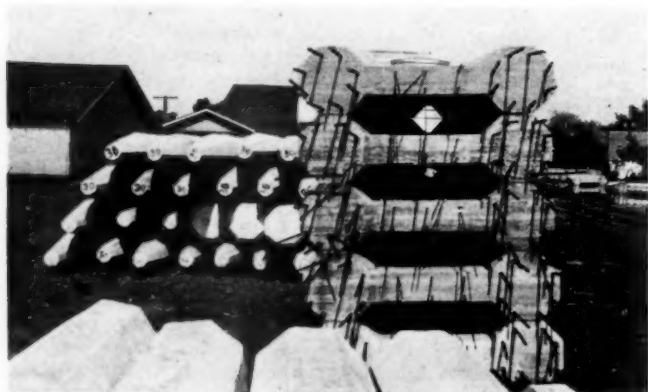
Bridge Engineer, Missouri Pacific, St. Louis, Mo.

**A**N adaptation of the 24-in. reinforced concrete pile that was developed by the Missouri Pacific and has been employed extensively in the construction of three-pile bents for trestles, has been applied recently in a unique form of tower or bent for the support of 55-ft. girder spans in two viaducts. The object of this innovation is to extend the application of the concrete bent construction to locations where the height of the structure is such as to preclude the use of the reinforced concrete pile bent. In some portions of the two viaducts, the distance from the ground to base of rail is 45 ft.

This design, which embodies the use of precast units, wherever practicable, was not evolved for the purpose of devising something that is new or novel but to provide a structure that can be installed without altering the pile trestle it replaces. The use of precast units was influenced by a desire to eliminate as much form work as possible and by the availability at Little Rock, Ark., of the railroad's plant for the casting of these and other concrete members.

## Novel Towers

As seen in the illustrations, each tower consists of two battered legs, each of which is made up of two battered 24-in. reinforced concrete columns that are connected by a solid concrete diaphragm 10 in. thick. The two legs are connected at the base by the footing, at the top by a cap, and at an intermediate elevation by a strut. In general, the plan implies the precasting of the legs and the placing of the footing, cap and strut concrete in the field, to produce a monolithic structure, after the legs have been set in position. However, because the weight of the legs for some of the higher



Some Precast Tower Legs, Concrete Piles in the Background



The Concrete Tower Viaduct in the White River Crossing

towers has been too great to permit their erection by a crane operating on the old trestle, these higher towers have been cast in place in the field.

The first application of this construction was in the replacement of a wood pile trestle, comprising the south approach to the channel span of the bridge across the White river in eastern Arkansas. This approach trestle, which is 2,700 ft. long, extends across bottom lands that are subject to overflow of the White river and back water from the Mississippi. The highest bents were required where the structure crosses a slough.

## Required Pile Foundations

The character of the ground is such as to require pile foundations, and the Missouri Pacific standard 24-in. piles were employed, using 10 to 12 piles for each tower, arranged in groups of 5 or 6 piles under each leg. The span lengths for the new structures were selected so that all the tower locations would fall between bents of the old structure, and the batter of the tower legs is sufficient so that all foundation piles could be driven without disturbing any part of the old deck. The trestle embraces 52 towers of which 21 were of such height as to require them to be concreted in the field in their entirety, but the legs for the other 31 towers were precast.

The piles were driven with a special Vulcan No. 0



hammer, weighing 23,000 lb., with a 9000-lb. ram. A locomotive crane was used to set the piles and to handle the hammer. In accordance with practice developed on the Missouri Pacific in the driving of these large piles, no leads were used and, when necessary to clear for trains, the hammer was detached and set on blocks under the trestle until the crane returned.

### How the Legs Were Supported

To afford monolithic construction of towers embodying the use of precast legs, these legs were made with the longitudinal rods of the columns protruding for a distance of 30 in. at both the top and the bottom, thus insuring an effective bond with the field-placed concrete of the cap and the footing. This imposed no complication in the construction of the cap, but since it implies the setting of the legs before the footing was concreted, it presented the formidable problem of providing a means for holding the tower legs in the correct position until the footing concrete had been placed and set.

This was accomplished by finishing the four corner piles of each group to exact elevation and then setting on these piles a structural steel frame or spider made of angles with welded connections, the top of this spider being equipped with bearing surfaces that afford an accurate support for the tower legs when placed at the correct batter. The skeleton construction of the spider imposed no interference with the reinforcing bars that projected from the bottom of the tower legs.

If the corner piles, when driven to the depth necessary to secure the required carrying capacity, had their tops below the elevation of the spider support, the upper 12 in. of concrete was stripped off and the piles extended by casting concrete in forms clamped to them. Piles that

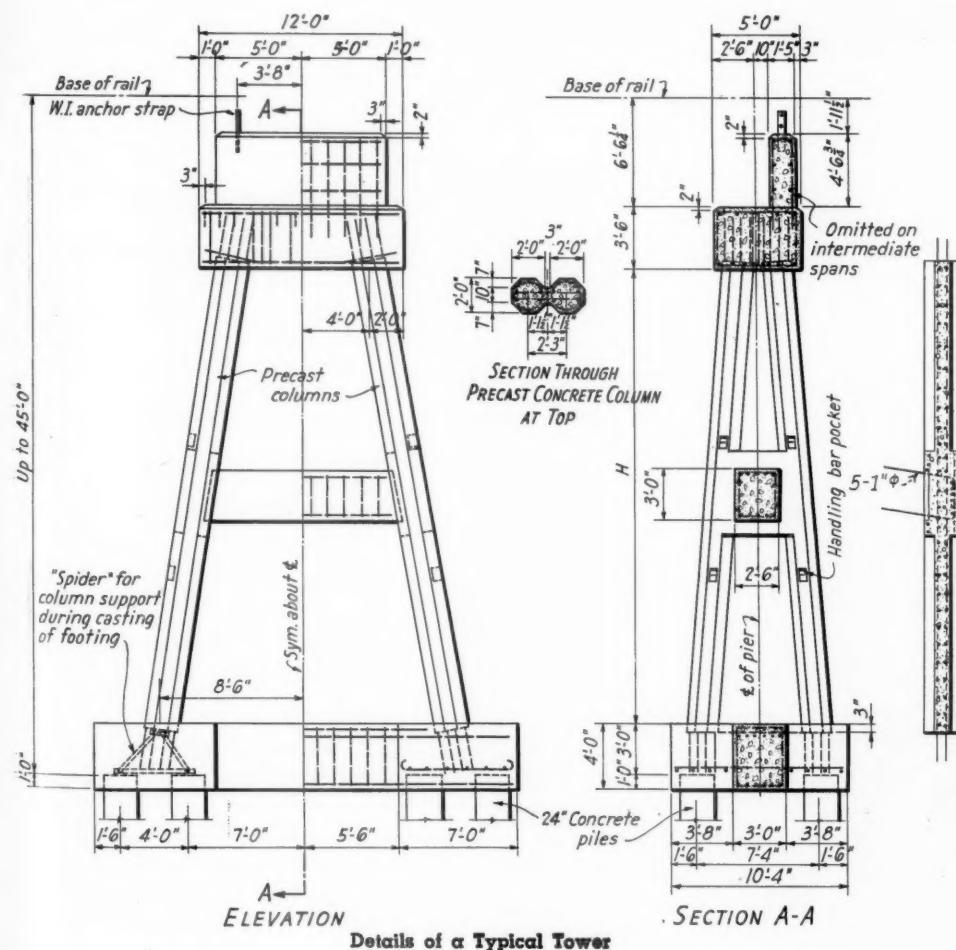


A Spider in Position on the Piles Ready to Receive the Tower Leg

were "high" were cut off and the tops refinished to exact elevation.

### Set By a Crane

A 50-ton crane was used to set the precast tower legs, the heaviest of which weighed about 26 tons. The



The Piles Were Driven From the Deck of the Existing Trestle

work was carried on without a hitch except for such interruptions as were necessary to clear for trains. Handling of the tower legs was facilitated by providing six recessed lifting loops—two in each column for loading and unloading, and two at the top for swinging the legs in a vertical position.

After each leg was set in place on the spider, it was braced and guyed to hold it in position until the field



One of the Towers in the Bridge Over Patten Creek

concreting had been completed. The footings were concreted first, after which the forms were placed for the casting of the cap and the intermediate strut. The latter was keyed effectively to the legs by means of recesses that had been cast in them for that purpose.

All concrete for the cast-in-place towers and the caps and struts for precast bents was mixed in a central plant. Storage bins and measuring hoppers were located below the bridge deck, permitting gravity handling. The mixer was directly below the measuring hopper. The concrete was hoisted to the track level and distributed in two  $\frac{1}{2}$ -yd. hoppers on push cars moved by a motor car. All concrete was tremied into the forms. The long columns were placed in two sections to prevent shrinkage at the strut.

#### The Bridge Over Patten Creek

Two towers of this type were used also in a bridge across Patten creek near Chester, Ill. This creek lies in a deep, steep-sided ravine, which is crossed by a 58-ft. deck girder span with creosoted pile trestle approaches. The concrete towers serve as the supports for the girder span and the ends of the adjoining trestle spans.

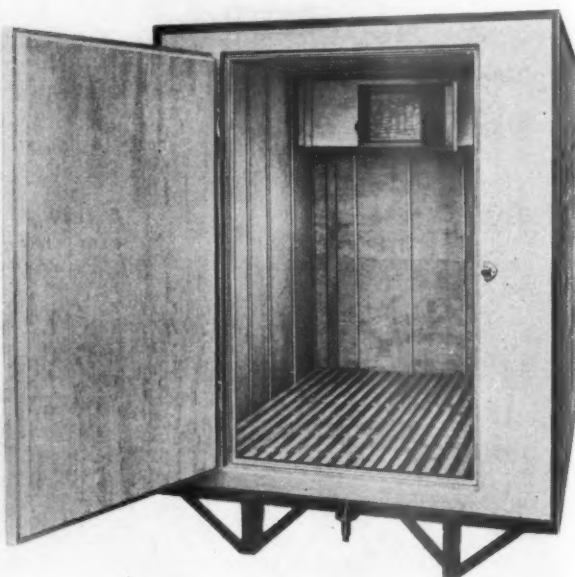
It was originally intended to precast these towers, but as only two were required, the erecting contractor was permitted, at his request, to cast the towers in place. Therefore, after the 24-in. foundation piles were driven,

forms for the entire tower, including caps and struts, were built of lumber. Each tower was then completed in one continuous casting operation above the footing, except that approximately two-hour intervals were allowed at the level of each strut and again at the underside of the caps to allow initial shrinkage to occur before placing was resumed. External vibration was used to settle the concrete into place. The splendid appearance of the towers built by this method is revealed by the photograph.

These towers were designed and built under the supervision of the writer and approved by S. L. Wonson, assistant chief engineer of the Missouri Pacific.

## Refrigerator for L.C.L. Perishables

SOME 15 railroads throughout the country are experimenting with the operation of portable refrigerators for handling l.c.l. perishables, manufactured by the All Steel Welded Truck Corporation, Rockford, Ill. This company, which has been engaged for several years in the manufacture of special purpose industrial trucks, applied the idea of a refrigerator to be handled into and out of cars by their patented adjustable dolly in freight houses and elsewhere several months ago. These portable refrigerators are  $6\frac{1}{2}$  ft. long,  $5\frac{1}{2}$  ft. high and  $4\frac{1}{2}$  ft. wide, the outside measurements being 6 in. greater in each case. They have a capacity of 160 cu. ft., and, though they weigh 900 lb., they are easily manipulated by one man by means of the dolly. Dry ice is used as a refrigerant, but they can also be constructed to use ice and salt. The regulation of the temperature is controlled by rubber baffle plates placed in the bottom of the dry ice magazine. When loaded in box cars, they are placed at the end or the side and blocked in front



Interior View of New Refrigerator for Transporting L.C.L. Perishables

with two wooden blocks. Several test runs have been made with a lading consisting principally of packing house products and butter, although the refrigerators are also adapted to carry all kinds of l.c.l. perishable freight.

# Turbine Locomotive Design Proposed

F. & T.E.A. Committee\* develops detail plans for a condensing locomotive with mechanical drive

**I**N the interest of fuel economy and an effort to develop motive power units having better operating characteristics, less over-all length and weight, lower first cost as well as operating and maintenance costs and a far greater availability for service, this committee began with its first report in 1928, a research covering a type of motive power which it considered had great possibilities for development.

Steam turbines had for a long time been used and are now being used to generate power in all commercial fields at a lower cost per horsepower than can be obtained from any other source. It then appeared, and we still believe that our judgment was well founded and that it is only a matter of determining a suitable type of design for a locomotive to permit a practical and satisfactory application of a steam turbine and transmission to the driving wheels.

It is toward this development that the committee has labored and is submitting its design and proposition in comparison with that for the most modern power equipment now being built for higher-speed passenger service.

It would be impossible for any one manufacturer to develop all the designs for the various parts of such a locomotive as this committee has proposed. Years of research and development have been required to complete many of these parts and this committee wishes to express its appreciation and give full credit to the manufacturers listed who have co-operated so whole-heartedly in developing the various parts of the proposed locomotive.

## Description of the Proposed Locomotive Design

With certain important fundamental details decided upon, the committee proposes a design for a 4,000-hp. condensing locomotive with direct mechanical drive, using a 2-4-2-2-4-2 wheel arrangement, and having a starting tractive force of 64,000 lb.

The length of the cab is to be 81 ft.; length over pulling faces of couplers, 84 ft.; weight on the four pairs of driving wheels, 280,000 lb. and on the truck wheels 220,000 lb., making a total of 500,000 lb. in working condition; truck wheels to be 37 in. and driving wheels 51 in. in diameter and of rolled steel. The wheel arrangement indicates that the locomotive will be carried on two 8-wheel trucks.

**(Boilers.)**—Four cylindrical continuous-tube, high-pressure and high-temperature boilers will be used; two located near each end of the locomotive cab. The steam pressure will be 1,200 lb. and the steam temperature 850 deg. F. Full automatic controls will be provided for the oil burner, boiler feed pump and combustion air

supply to maintain practically constant pressure and temperature at highest efficiency.

The fuel will be low-grade furnace or distillate oil vaporized before it passes through the burner. Forced draft of preheated air will be supplied from a blower. A boiler efficiency of 85 per cent should be obtained when pre-heated air is used.

**Heat Exchanger Type Evaporator.**—A heat-exchanger type evaporator is to be used to evaporate raw water which will be discharged as steam into the roof-type air-

Comparative Data for Four Different Types of Modern Motive Power Including the Diesel-Electric, Turbine-Electric, Reciprocating Steam and Turbine-Mechanical

	5,400-Hp. Diesel- electric (3 units)	5,000-Hp. Turbine- electric (2 units)	4,500-Hp. Steam 4-6-4 type (1 unit)	4,000-Hp. Turbine- mechanical (1 unit)
Starting tractive force, lb. ....	160,000	160,000	55,200	64,000
Tractive force at 60 m.p.h., lb. ....	19,000	19,000	21,300	19,000
Tractive force at 80 m.p.h., lb. ....	10,700	10,700	13,700	13,700
Total length of locomotive .....	260 ft.	181 ft. 8 in.	103 ft.	84 ft.
Total weight of locomotive, lb. ....	1,008,000*	1,060,000	775,000	500,000
Total cost of locomotive .....	\$625,000	\$650,000	\$150,000	\$360,000
Total train weight, lb.†	2,630,000	2,815,000	2,530,000	2,255,000
Ratio of locomotive weight to train weight, per cent ..	38.5	37.7	30.6	22.2
Estimated locomotive weight per rated horsepower, lb. ...	162	212	172	125
Estimated locomotive weight per drawbar horsepower, lb. ....	255	310	221	149
Estimated locomotive cost per rated horsepower .....	\$116	\$130	\$33.3	\$90
Estimated locomotive cost per drawbar horsepower .....	\$183	\$190	\$42.8	\$107.5
Cost per pound of net locomotive weight...	\$.762	\$.684	\$.287	\$.857

\* Includes 59 per cent of fourth auxiliary power car weight.

† Includes 13 revenue cars at average weight of 117,770 lb. per car.

cooled condenser and returned to a hot well, from which it will be pumped back into the boiler. In this manner, all boiler feed make-up water will be pure condensate. This heat exchanger evaporator will also be used to furnish steam for train heating. High pressure and temperature steam will be used in this heat exchanger.

**Condenser.**—The condenser will be of either aluminum fin or copper fin tube construction; the full length and width of the cab with exhaust-steam heaters extending the full length on the center line of the locomotive. The condenser units will drain outward to the sides of the cab and return condensate to a hot well. Triplex pumps will be used to feed the boilers.

Eight propeller-type fans 9 ft. in diameter will draw air from the ends and sides of the cab through ducts and blow it upward through the roof condenser. The fans will be driven from one line shaft for each half of

\* The report of the Committee on Steam Turbine and Steam Condensing Locomotives was presented by Chairman L. P. Michael, chief mechanical engineer, Chicago & North Western, during the recent convention of the Railway Fuel and Traveling Engineers' Association at Chicago, September 28 to October 1. The present article is an abstract of this report.



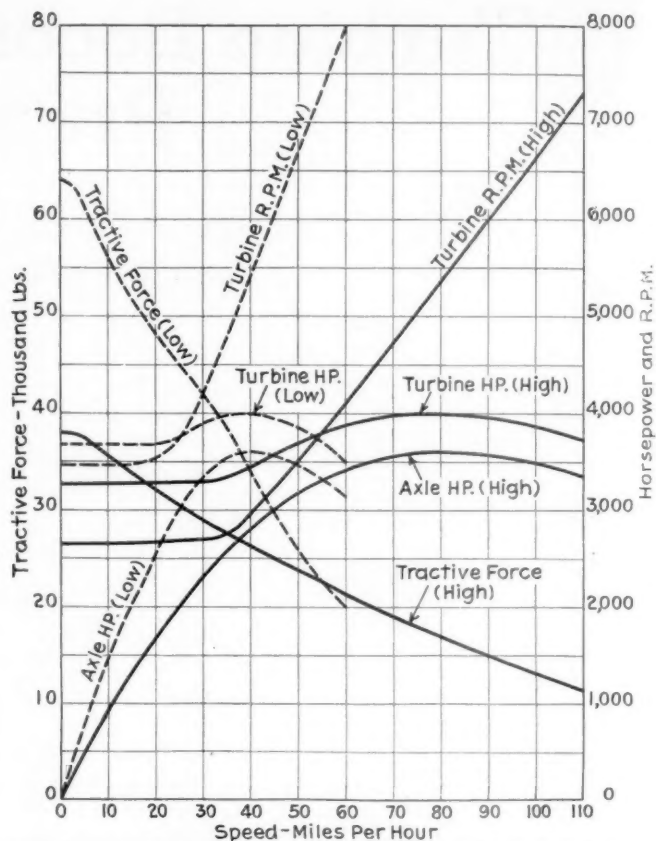
the length of the locomotive and through bevel gears. A high-speed turbine will be geared to each line shaft. Thermostatic regulation of the speed of the turbine will be used to insure minimum cooling of the condensate.

**Main Turbine.**—The main turbine for driving the locomotive is located in the center of the locomotive cab with shaft extending longitudinally; this turbine will be of the impulse-reaction type, designed for a speed of 8,000 r.p.m. at 120 m.p.h. The bladed portion of the turbine consists of two 24-in. mean-diameter Curtis wheels in series, followed by 18 stages of reaction blading.

**Driving Gear.**—Pinions will be used on both ends of the turbine shaft and are to mesh with gears to reduce the speed from about 6,700 r.p.m. at 100 m.p.h. to about 1,800 r.p.m. at this speed for drive shafts extending toward each truck. Each shaft at this point will connect directly through couplings to a combined hydraulic coupling and epicyclic gear with output shaft delivering power to a differential-type reversing gear having an output shaft extending over driving axles and with Hypoid pinions on this shaft to drive Hypoid gears on each driving axle.

In this drive shaft two universal joints will be used between the reversing gear and the nearest driving axle. The universal joint adjacent to the nearest driving axle will be located as near as practical over the pivot point of the truck, which will reduce the angle of the driving shaft to a minimum on curved track. Two universal joints will be located in the drive shaft between the driving axles.

**Main Frame.**—The main frame of the locomotive will be of cast steel in one piece, with fuel-oil storage tanks cast integral. The truck frames are also to be of cast steel in one piece. Fully-equalized spring rigging is to be used to carry the truck frame on the driving and truck axles; the main frame to be carried at three points on each truck; one point to be at the pivot point of the



Estimated Turbine Performance and Tractive Effort Including V. S. Fluid Coupling and Gear at Constant Steam Flow of 34,700 Lb. Per Hour

Clasp brakes will be used on all driving and truck wheels. The locomotive cab will be of trussed construction of high-tensile steel, designed to work with the main frame to carry the boilers, turbines and driving gearing and fuel and water storage; 5,000 gal. fuel oil and 5,000 gal. water to be carried when required for steam heating or air conditioning.

Only a small quantity of water is needed to be carried for boiler feed water for generating steam for the turbines, since the exhaust steam from these turbines will all be discharged to the condenser and will be returned from it to be used again for boiler feed water. Only one main turbine will be provided to drive the locomotive.

All other equipment will be in duplicate, one complete set being placed at each end of the locomotive cab, including the driving gear from each end of the turbine, and arranged in such manner that one set, that is, one end only of the locomotive, can be operated if necessary.

**Auxiliary Equipment.**—The auxiliary equipment at each end of the cab will consist of two boilers, one heat-exchanger evaporator, one-half of cab roof radiator condenser with four turbine-driven air-cooling fans, one turbine driving, one boiler feed pump, one combustion air blower, one vacuum pump, one condensate pump, one oil fuel pump and one small generator to furnish electric current for boiler automatic control equipment. A separate turbo-electric generating set is provided for train lighting and air conditioning when required. Separate turbo-electric generating sets will be provided for headlight and cab lighting and train control equipment when used; compressed air for brakes, sanders, bell ringer, etc., to be furnished by a 150 cu.-ft.-per-min. turbine-driven air compressor.

**Streamlining.**—The locomotive as proposed is only moderately streamlined. It can, however, have this

#### Manufacturers Who Have Assisted in Developing Various Parts of the Turbine Locomotive

Manufacturers	Items
Edgewater Steel Company	Rolled steel wheels
American Steel Foundries	Foundation brake equipment
Westinghouse Air Brake Company	Air brake equipment
Timken Roller Bearing Company	Arrangement of driving axles and hypoid driving gear with roller bearings
General Steel Castings Corporation	Cast steel main frame and truck frames
Gleason Works	Hypoid pinion and gears
Spicer Manufacturing Company	Universal joints
Falk Corporation	Speed reducing gear and reversing gear
Allis-Chalmers Manufacturing Company	Steam turbine and control
Railway Locomotor Company	Boiler, oil burner and controls
Perfex Radiator Company	Copper fin tubes for radiator condenser
Soverhill Engineering Company	Cast aluminum fin-type sectional radiators for the condenser
Aerovent Fan Company	Propeller type fans for the cooling air for the condenser
Hydraulic Coupling Division of the American Blower Co. (Detroit, Mich.)	Hydraulic coupling
Hydraulic Coupling & Engineering Co., Ltd. (England)*	Hydraulic coupling and epicyclic gears
David Brown & Sons (England)	Epicyclic gear
Pyle-National Company	Turbines and generators for lighting and auxiliaries

\* Harold Sinclair, managing director of the Hydraulic Coupling & Engineering Company, Ltd., of England, should be given special credit for the development that he has made in the Vulcan-Sinclair fluid coupling for which he was awarded a medal last May by the Franklin Institute of Philadelphia.

truck and the other two points to be on rollers at each side of the truck frame and at the opposite end of the frame from the pivot bearing. The end of the truck frame opposite the pivot will be extended to carry the coupler and draft gear.

streamlining carried to any desired extent. Any increase would materially increase the length and weight of the locomotive with very little benefit other than for advertising purposes.

### What the Chart Shows

In order to demonstrate more clearly just what is being proposed for the design of this steam turbine-driven locomotive with mechanical drive and condenser, seven drawings\* have been made and are submitted as a part of this report.

The chart includes plotted curves indicating the horse-

\* Owing to space limitations only one of these drawings can be included in this abstract of the committee's report.

power and tractive force for the main steam turbine at full load, from starting to 110 miles per hour, through the hydraulic coupling and epicyclic gear. These curves indicate clearly the high tractive force at starting and low speed and during acceleration up to 55 m.p.h. while the epicyclic gear and one section of the hydraulic coupling are in operation, and further the high efficiency of this driving gear from 55 to 110 m.p.h. during the period when the epicyclic gear is inoperative and both sections of the hydraulic coupling are in operation.

Considerable comparison data including estimated costs and weights are given in one of the tables for four types of locomotives, of which the three types other than the turbine-mechanical, are now being built and are expected to be delivered for service before the end of this year.

## Fire Association Meets at Cleveland

Protective activities reduce annual loss of property and life and cut expense due to traffic delays

**A** DECREASE in fire losses on United States railways from \$12,000,000 annually 25 years ago to only \$3,580,000 in 1936 represents the effect of the organized and scientific fire prevention activities carried on by railways, according to reports made at the twenty-fourth annual meeting of the Railway Fire Protection Association at Cleveland, Ohio, on October 19 and 20. "Successful fire prevention work," said President W. F. Hickey, superintendent of insurance of the New York, New Haven & Hartford, in his address, "not only saves property but human lives as well and its importance is greater today than ever before, ranking with the prevention of loss of life and property in highway accidents. On railroads, with the ever increasing costs of taxes, materials and labor, it is of the utmost necessity for the industry to conserve resources and be free from fires which increase expenses due to restoring destroyed property, to providing temporary facilities, for diversion of traffic and for delays to trains."

The program of the meeting dealt with all phases of fire prevention as well as causes and effects. It included round table discussions of the hazard present in air-conditioning equipment, protection for Diesel motors and aeroplanes and hangars, addresses by railway and other officers and reports of committees on bridges and trestles, snow melting and pyroxylin lacquers and finishes.

All officers were reelected for the ensuing year, these being: president, Mr. Hickey, vice-president, W. A. Radspinner, superintendent of fire prevention of the Chesapeake & Ohio, and secretary-treasurer, P. A. Bisell, of the Maine Central.

### Easy Living Encourages Thoughtlessness

Ignorance, carelessness, thoughtlessness and absent-mindedness, encouraged by easy living, were cited by Frank J. Merrick, judge of the Common Pleas Court of Cleveland as causes for all fires. To demonstrate this

point he said that most fires in homes are due to inability to realize incinerary possibilities and to absent-mindedness; faulty electric wiring, responsible for many fires, is due to poor workmanship, involving ignorance or carelessness; and the dropping of cigaret and cigar butts and matches is the result of failure to realize the consequences, carelessness and absentmindedness.

Lack of training and education encourage these weaknesses, he continued. In Cleveland, where children have been given fire prevention training in school and have imparted the information to their parents, it has been found that fire frequency decreases with education. Training in that city reduced the fire loss per capita from \$2.50 to less than \$1.

### 92.3 Fires Per Railroad in 1936

In 1936, according to the report of the committee on statistics, 65 railroads had an average of 92.3 fires, with an average loss of \$55,085 per road, or \$6.79 per minute. The average loss per fire was \$597.

The number of fires and the losses reported by 65 railroads in 1936 were distributed as shown in accompanying table.

A total of 685 of these fires were caused by trespassers, 661 by sparks from locomotives, 522 by outside exposure, 363 by smokers, 256 by loading hot cinders, 254 by the improper construction, installation or maintenance of stoves, 209 by spontaneous ignition and 203 by burning right-of-way.

The committee, in commenting on the statistics, said: "When we consider the tremendous values represented by railroad buildings and rolling stock that are specially subject to large and expensive fires, a total damage of 3½ million dollars does not seem to be greatly excessive or out of line with losses in other industries. It is safe to say that on each of the 65 railroad systems reporting there is at least one concentration of buildings, shops

and rolling stock that could easily produce a million dollar fire, and on several large systems there are any number of such possibilities. Yet in 1936 the three largest single losses were only slightly over \$100,000."

### Masonry and Concrete Are Not Fireproof

The prevention of fires on bridges and trestles was given special attention because of the large number of fires and the loss suffered by damage to property and resulting from delayed traffic. In 1936 there were 315 of these fires which damaged property to the extent of \$269,100. The committee's report and the discussion by members will be used as a basis for revising the association's handbook on fire prevention.

The committee's report dispelled the popular belief that masonry and concrete are fireproof, by showing how spalling weakens the structure so that eventually it has to be replaced. In discussing sparks and cinders from locomotives as causes of fires, the report called attention to the fact that ballasting tracks on bridges retards the spreading of fire to other parts of the structure. The assumption that the substitution of electric motor power for steam eliminates fire hazards on bridges was challenged by the report, which said: "In the case of third-rail systems a weak detail may be the support of the energized rail, a short circuit from which may occur when the insulators become wet from rain or from the brine spilled from a refrigerator car. The effect can be considerably magnified if any metal fastening of the bridge ties to the supporting steelwork should happen to form part of the circuit temporarily created. Similar conditions could be caused by a live trolley wire or aerial conductor falling so as to make contact with metal parts of a bridge deck. As a definite example of this possibility, a high timber trestle with metal protection plates over the deck was destroyed for a length of nearly 2,000 ft. when a power wire fell to the deck

in part: "Fire prevention for bridges is fundamentally a matter of original design. For existing structures modification of the construction may be physically possible and warranted, both with respect to the actual cost of replacing the existing facility if damaged or destroyed by fire and of still greater importance, the delay, inconvenience and expense of traffic delay and rerouting, if the damage of the structure is of considerable magnitude.

"For open decks of frame trestles, covering the stringers and caps with sheet metal may serve to diminish the fire hazard. Asphalt mastic with sand or limestone chips can be utilized similarly for smaller surfaces to deflect any heated particle falling on those surfaces, and the mastic may also be used to seal season checks or depressions created by the original framing of the timber. Portland cement is not recommended because it does not adhere to the wooden surfaces.

"Removal of weeds and combustible refuse from the vicinity of frame trestles or timber bents supporting metal spans is most important. Merely cutting weeds is not a permanent remedy. Uprooting all weed growth and covering the ground with sand or cinders to discourage future weed growth is ordinary practice. Chemical weed-killing compounds have also been used effectively. Burning weed growth as a rapid and economical method has proved a definite external hazard to the structure being protected by the removal. A clearing fire, if used, should be originated at the structure so that its magnitude and direction can be controlled. If the clearing fire is originated at a remote point it is possible for it to grow out of control before reaching the structure, thus defeating the original purpose."

General discussion of the subject revealed that some railroads are applying a heavy coat of paint into which sand is embedded, to ties and wood exposed to the hazards of sparks, cigarettes and matches. One railroad

FIXED PROPERTY			ROLLING STOCK		
	Number of fires	Loss		Number of fires	Loss
Miscellaneous, general	566	\$274,092	Box cars	1,346	\$633,720
Bridges, trestles, culverts	315	269,100	Coaches	90	194,223
Miscellaneous buildings	359	237,796	Steam locomotives	106	100,777
Passenger stations	253	164,463	Electric locomotives	19	80,141
Engine houses and back shops	45	162,550	Work equipment	194	71,260
Locomotive coaling stations	43	158,813	Refrigerator cars	167	61,410
Merchandise in transit	89	152,475	Combination mail-express-baggage	110	58,062
Leased property	97	132,559	Gondolas and flat cars	599	50,450
Freight stations	46	94,901	Tank cars	47	42,132
Miscellaneous shops	59	77,272	Busses and trucks	18	21,500
Cotton and cotton platforms	63	67,358	Dining cars	16	21,462
Water stations	67	45,606	Gas electric cars	15	8,974
Section houses	48	28,349	Miscellaneous	20	2,626
Switch and signal towers	39	24,619	Power work equipment	11	948
Wharf property	65	23,615	Diesel equipment	4	776
Employees' dwelling houses	60	22,149	Chair and sleeping cars	15	727
Storehouses	20	18,650			
Car shops	144	13,425			
Telephone, telegraph, signal poles in line	95	12,837			
Crossties, lumber stored	9	9,313			
Power houses	6	8,262			
Grain elevators	11	5,869			
Sand houses	23	1,166			
Locomotive shops		736			
Total—fixed property	2,522	\$2,005,975	Total—rolling stock	2,777	\$1,349,188
			Unclassified losses	699	225,369
			Grand totals	5,998	\$3,580,532

of the structure, causing fire simultaneously at many points by the short circuits thus created."

### Original Design a Fundamental in Prevention

Another cause of fires on trestles, brought out in the discussion, was molten metal from brake shoes. Some members reported that pieces of metal, often as large as a hand, had melted from brake shoes and fallen to the bridge deck.

In considering protection against fires, the report said,

has equipped locomotives used on wooden structures with a sprinkler so that the deck is wet each time a train passes over it and the chances of ignition by sparks from the locomotive and any part of the train are eliminated.

The handling of explosives and liquefied petroleum gases was another subject given consideration. W. B. Hannum of the Bureau of Explosives, in an address on Fire Prevention from a Bureau of Explosives Standpoint, discussed the handling of explosives and the work done by the bureau to insure proper packing and

(Continued on page 689)



# Two Electrical Sections Hold Joint Meeting

All association work in mechanical and engineering departments, now within province of A.A.R.

## Part II

**T**HE Electrical Sections of Mechanical Division V, and Engineering Division IV, of the Association of American Railroads held their annual meetings in the Hotel Sherman, Chicago, Ill., October 27 and 28. The joint meetings and a part of the separate sessions of the Mechanical Section were reported in the *Railway Age* of November 6, 1937. Summaries of reports and discussions covering the concluding Mechanical Section reports, and all of the Engineering Section reports, which were discussed separately, follow:

### Railway Automotive Equipment

The several subjects considered by the committee on railway automotive equipment included: (1) A determination of the essential tools for handling repairs; (2) a report on reducing fuel costs; (3) a study of the power unit and gear-ratio requirements for mixed-train service; (4) a general study of Diesel engines for railway use; (5) a study of control systems; (6) maintenance organization requirements and, (7) a determination of what passenger service can be handled economically by Diesel power.

1. A comprehensive and detailed list of tools is included.

2. No report on butane is included, since the gas engine is rapidly giving way to the Diesel for traction purposes.

3. The committee did not report on subject No. 3, except to state that the subject requires special investigation for each particular run considered.

4. The study of Diesel engines for railway use has resulted in a specification to provide for the manufacture and testing of oil-electric locomotives (or power cars) complete and ready for operation. It covers guarantee; information to be furnished with bids; drawings, tracings, photographs and reports required, and specifications for locomotive parts, including underframe, bumpers, couplers, coupler pockets, trucks, center plates, side bearings, equalizing gear and spring rigging, wheels, axles, journal boxes and bearings, brakes, piping, cabs, miscellaneous parts, engine and auxiliaries, electrical equipment, painting and testing.

No additions to previous studies made on subjects Nos. 5, 6 and 7, were offered.

**Discussion**—A. R. Walker, electrical engineer equipment, Illinois Central, presented the report. He explained that the specifications for oil-electric locomotives and power cars contained in the report were offered as a guide for those who need to make such specifications, and were not to be considered as a proposed standard. He suggested that a standard series of locomotives may in time be developed.

J. P. Kivlen, engineer maintenance-of-way and engin-

earing, Northampton & Bath, made a number of suggestions for improving the specifications in the report. Among these, were the following: express a preference for method of lubrication, include definite statement as to axle size for each weight limit on rail; change Section 19, concerning cabs, to read "two or more compartments, one for the operator and others for engine and equipment"; substructure floors should be oil-tight; use of clutch for mechanically-driven radiator fans is a nuisance and if less air is required, closing of radiator shutters should be resorted to; mechanically-driven compressors are satisfactory if full air is delivered with engine idling and excess delivered at higher speeds; a generator ammeter and not motor ammeter is required; generator voltmeter is not as necessary as ammeter; add wheel slip indicator; odometer not necessary except on road locomotives.

Mr. Kivlen also suggested that, if permissible governor-speed range was too close, it might impose possible cost increases. To this, W. S. H. Hamilton, equipment electrical engineer, New York Central, replied that close regulation of governor is desirable since it is difficult to maintain suitable regulation as the locomotive grows older. He also expressed a preference for clutch or motor-control rather than shutter control of ventilating air.

### Locomotive Electrical Equipment

The report of the committee on locomotive electrical equipment is concerned primarily with the development of standard practice for shop maintenance work on turbo-generators and other lighting equipment, and general maintenance and practice of locomotive equipment and new developments.

The portion dealing with turbo-generators includes a complete list of the procedure required for periodic maintenance.

Several types of new equipment which offer promise are described. One of these is a device whereby train-stop resetting can be accomplished in the cab of the locomotive, thereby eliminating the necessity of an employee alighting from the engine for this purpose. Another is an electric motorized mechanical lubricator, which is subjected to no danger of breakage at high locomotive speeds and which assures adequate lubrication at very low locomotive speeds. It also can be used for air pumps, stokers, etc., when the locomotive is standing.

A third development is a locomotive warning light for high-speed trains, which projects a 3,000,000-candle-power beam which is made to operate from side to side in the general shape of a figure 8.

**Discussion**—Following the presentation of the report by C. W. Nelson, supervisor train control and train

lighting, Chesapeake & Ohio, A. E. Voigt, car lighting and air-conditioning engineer, Atchison, Topeka & Santa Fe asked if the recommended 72-hr. baking period for the armatures of turbo-generators was not unnecessarily long. L. G. Conklin, general electrical inspector, Delaware & Hudson, explained that it was included as the manufacturer's recommendation, but said that in his own opinion a considerably shorter time was satisfactory.

W. F. Freutel, supervisor train lighting, Chesapeake & Ohio, wanted to know why a 50 per cent gasoline and 50 per cent carbon tetrachloride mixture should be used for cleaning. He said the Chesapeake & Ohio does not permit use of any gasoline.

E. K. Bloss, supervisor rail-motor cars, Boston & Maine, explained that in the past gasoline was commonly

Nominating Committee: F. W. Reed, chief electrician, Northern Pacific, J. R. Sloan, chief electrician, Pennsylvania, G. W. Bebout, electrical engineer, Chesapeake & Ohio, L. S. Billau, assistant electrical engineer, Baltimore & Ohio, R. E. Gallagher, electrical engineer, Louisville & Nashville.

## Electrical Section, Engineering Division

The Electrical Section, Engineering Division, sessions were opened on Wednesday morning, October 27, by Chairman H. F. Brown, assistant electrical engineer of



A. R. Walker  
Chairman



F. E. Starkweather  
Vice Chairman (East)



J. A. Andreucetti  
Secretary

### Officers, Electrical Section, Mechanical Division, A.A.R.

employed for cleaning but that the activity of safety bureaus had discouraged its use. Carbon tetrachloride, he said, was good but expensive. Then it was found that since both materials had the same rate of evaporation, the gas developed by the evaporation was not dangerous. He added also that there are now several other less volatile hydrocarbons which can be used with carbon tetrachloride.

Section No. 3 of the report, presented by Mr. Conklin, describes a recent development whereby train-stop resetting can be accomplished in the cab of the locomotive. J. R. Sloan, chief electrician, Pennsylvania, asked if this were permitted, and Mr. Conklin replied that it had recently been allowed and that a timing device is being tried. Mr. Nelson said that on his railroad an engineman cannot reset until he comes to a full stop. J. Carlson, chief electrician, New York Central, described the timing device being tried and explained that different timing was used, respectively, for passenger and freight locomotives.

### Election of Officers

The following list of officers was elected to serve during the ensuing year: Chairman, A. R. Walker, electrical engineer equipment, Illinois Central; vice chairman (East), F. E. Starkweather, electrical engineer, Pere Marquette; vice chairman (West), C. E. Wood, engineer of train lighting, Chicago, Milwaukee, St. Paul & Pacific. Board of Direction: A. E. Ganzert, electrical inspector, Chicago, Rock Island & Pacific, G. E. Hauss, electrical foreman, Cincinnati Union Terminal Company.

the New York, New Haven & Hartford, who pointed out the rapidly rising importance of railroad electrical departments, discussed competition being experienced by the railroads, and emphasized that it is the responsibility of the electrical engineers to spur the railroad managements to the use of available electrical equipment to the same extent as is now done by their principal competitors.

G. I. Wright, manager transportation department, Westinghouse Electric & Manufacturing Company, discussed the increasing importance of the railroad electrical engineer through the application of electrical appliances, with resulting economies, and emphasized the need for well-trained electrical engineering staffs. Mr. Wright stated that, in his opinion, the electrical engineering departments of the railroads should be on the same basis as the mechanical and engineering departments, and should report directly to the vice-president.

On Wednesday afternoon, October 27, J. C. Irwin, chairman of the Engineering Division, Association of American Railroads, and president of the American Railway Engineering Association addressed the Section and discussed the value of co-ordinated committee work of the various organizations engaged in establishing standards; he complimented the Section on its splendid work.

G. M. Magee, assistant director of the Division of Engineering Research, addressed the Section and described the organization and purpose of the Division of Engineering Research. Mr. Magee outlined the methods which the Division plans to follow and invited the co-operation of the Electrical Section.

The manner in which corrosion by electrolysis is mitigated and controlled is made interesting reading in the report on electrolysis. The experience of a number of railroads is outlined in a series of reports. In one instance, an official organization has been set up for the purpose of co-ordinating the problem of electrolysis, this organization including railroads, power and communication utilities and others affected. In most cases it has been found that best results are obtained by unofficial joint action. By means of such action, ground connections, negative returns, insulated pipe joints and other methods of controlling the flow of stray currents are arranged for. In some instances it has been found that corrosion is caused by soil conditions rather than stray currents. In others, rectifiers have been used to control ground potentials. Changing ground potential at one point affects the potentials at others, and it is, therefore, necessary for all interested parties to know when such changes are to be made. Co-ordination is relatively easy, since stray currents which cause electrolysis are also undesirable to the company causing them, because they represent power losses.

One railroad reports that protective coatings for underground pipes do not appear to have been developed to a point where they can be relied upon for complete protection.

*Discussion*—The report was read by S. D. Kutner, assistant engineer, New York Central. Paul Lebenbaum, electrical engineer, Southern Pacific, discussed conditions in the Pacific Coast area and the methods which have been used in co-ordinated studies of electrolysis problems.

#### **Overhead Transmission Line and Catenary Construction**

The Section's specifications for bronze and copper trolley wires are identical with those of the American Society for Testing Materials. Tolerance values for cross-sectional dimensions of grooved trolley wire are being revised, as shown in Exhibit B in the report. The revised tolerances have been approved by the A.S.T.M., and the American Transit Association.

Included also in the report is an Exhibit "A," covering a proposed specification for bronze messenger cable for catenary construction. Suggestions or criticisms from the members are invited, for the purpose of revising the specifications at next year's meeting, when it will be submitted for inclusion in the Manual.

*Discussion*—This report was presented by P. B. Burley, assistant electrical engineer, Illinois Central. Considerable discussion of clearances and loading occurred after the subject was opened by W. M. Vandersluis, general superintendent telegraph and signals, Illinois Central. This discussion was intended as an aid in negotiations being carried on with the Edison Electric Institute on wire crossing specifications.

#### **Standardization of Apparatus and Materials**

This committee has compiled specifications for friction tape and rubber-insulating tape, the revision of which has been deferred to permit of meeting with the committee of the Rubber Manufacturers' Association. It is the feeling of the members that the railroads should have a higher grade of tape than is called for in the A.S.T.M. specifications.

The committee is also developing a method for keeping A.S.A. electrical standards before the Section, and in the preparation of specifications, including insulated rubber-covered wires and cables.

*Discussion*—The report was presented by C. R. Troop, assistant engineer, New York Central and was approved without discussion.

#### **Clearances for Third Rail and Overhead Working Conductors**

The report of the committee on clearances includes two diagrams which it recommended for adoption by the Electrical Section. They show, respectively, clearance lines for pantograph, catenary construction and adjacent permanent-way structures, and clearance lines for equipment and permanent-way structures adjacent to third rail, and for third rail structures. The committee recommends that the report be accepted as a final report on these two clearance diagrams. It also recommends that the Operating Division of the A.A.R. be advised that the 22-ft. trolley height shown in the diagram does not include space for a trainman to stand on top of the car and swing a lantern.

*Discussion*—The report was presented by W. S. H. Hamilton, equipment electrical engineer, New York Central. A telegram from H. C. Griffith, electrical engineer, Pennsylvania, suggesting the clearance diagram be withheld because the National Electric Safety Code is being revised on the same subject, opened a lively discussion.

J. M. Trissal, electrical engineer—fixed property, Illinois Central, thought that the revised diagram should be approved because the diagram in the manual is out of date, and the N.E.S.C. specification would probably not be issued for two years. Mr. Hamilton said that he would recommend approval because the diagram represented the experience and best thought of men actually experienced in the field, and that it therefore should prove a valuable guide. He stated that the diagram presented minimum clearances which in turn meant minimum expense. Much discussion followed, opposition to approval being led by R. Beeuwkes, electrical engineer, Chicago, Milwaukee, St. Paul & Pacific, who questioned the 22-ft. height shown on the diagram and several other details, pointing out that whereas railroads in the East were likely to use steel poles, railroads in the West would probably install wood poles, because of different conditions and for economy. After lengthy discussion of the various phases of the subject, the action recommended by the committee was accepted.

#### **Protective Devices**

The committee on protective devices and safety rules in electrified territory has been assigned to recommend practices to be observed for the protection of filling stations serving buses, trucks, airplanes, rail-motor coaches and internal-combustion locomotives from danger of fire due to electrical sparks. An elaborate report on this subject was presented in 1936, and the committee is now engaged in making minor revisions which have been suggested.

The committee was also asked to prepare safety rules for employees in electrified territory and is now engaged in summarizing the rules in force on various railroads.

*Discussion*—The report was presented by R. G. Gage, chief electrical engineer, Canadian National. W. M. Vandersluis, general superintendent, telegraph and signals, Illinois Central, suggested that the committee work with the committee of the Petroleum Institute in connection with its study of recommended practice for the protection of filling stations from danger of fire due to electric sparks.

R. P. Winton, welding engineer, Norfolk & Western, emphasized the urgent necessity for such a specification.



Mr. Gage promised effective action and co-operation during the coming year. Paul Lebenbaum, electrical engineer, Southern Pacific, said the committee needed specific suggestions. J. E. Gardner, electrical engineer, Chicago, Burlington & Quincy, stated that the features which were objectionable to the oil companies should be ascertained.

C. G. Winslow, assistant electrical engineer, Michigan Central, said that it had been his experience that most of the objections to such protection came from the oil company subsidiaries who mostly objected to the expense, and apparently did not see the need for such protection. Mr. Lebenbaum questioned the need for a universal rule requiring track insulated joints, since conditions in the producing fields were different, the possibility of stray currents being quite unlikely in some of these areas. H. F. Brown, assistant electrical engineer,

protected by a plastic asbestos covering during the heat-treating process. The bonds may be similarly affected unless asbestos covering is employed when rail ends are built up by means of gas welding.

*Discussion*—The report was presented by Paul Lebenbaum, electrical engineer, Southern Pacific, and after an extended technical discussion of the effect of heat treatment of rail ends on head-of-the-rail type bonds, it was approved.

### Design of Substations

The committee on design of indoor and outdoor substations is at present developing a report on protective methods developed by the Pennsylvania Railroad. It also has reported on new equipment developed by manufacturers. These include the surge-proof transformer, an air core inductance and combined capacitance for lightning protection and series capacitors with improved insulation against surge. The latter device is of particular interest to railroads operating extended signal power circuits where voltage regulation is a problem.

The report also refers to the development of permanent magnet alloys (most of which are still in the research development stage) which offer new possibilities in the design of relays.

*Discussion*—The report was presented by S. R. Negley, electrical engineer, Reading Company and Central Railroad of New Jersey. In response to a request by Mr. Negley for specific assignments, the members mentioned possible subjects requiring up to date information including mercury arc rectifiers, small electronic frequency converters, lightning and overload protection, and circuit breaking equipment.

### High-Tension Cables

According to the report on high tension cables, the greatest interest in that field is the apparent tendency to use oil-filled cable instead of the solid-type cable of the 69-kv. classification. The past year's installations were exclusively of the oil-filled type.

There has been no electrical trouble with the Oil-static or Perelli-type cables, used for the 132-kv., single-phase circuit on the Pennsylvania Railroad in Baltimore and Washington. There has been some difficulty caused by electrolysis of the containing pipe used for the Oil-static system, but an investigation showed there is nothing more than could be expected on any pipe system placed under identical conditions and surroundings. The Perelli-type cable has been subjected to electrolysis to a sufficient extent that corrective action was considered desirable, and applied.

*Discussion*—The report was presented by F. J. White, electrical engineer, Okonite Company, who reviewed the year's progress with high tension cables.

### Corrosion-Resisting Material

The committee on the application of corrosion-resisting material to railroad electrical construction reports that it is continuing its corrosion test of samples in the Hemphill tunnel, and the Lambert Point Yard, on the Norfolk & Western. It had been suggested that samples be installed on the Hackensack Meadows on the Delaware, Lackawanna & Western, but hangers in service seven years near the Koppers Coke Company in the Hackensack Meadows did not appear to be corroded appreciably more than some located 40 miles inland, and the report does not indorse the suggestion.

*Discussion*—The report was presented by R. P. Win-



H. F. Brown  
Chairman

D. B. Thompson  
Vice-Chairman

### Electrical Section, Engineering Division, A.A.R.

New York, New Haven & Hartford, reviewed the background of the work on the assignment and thanked the members for their comments. Mr. Gage asked for written memoranda of any criticism members might have.

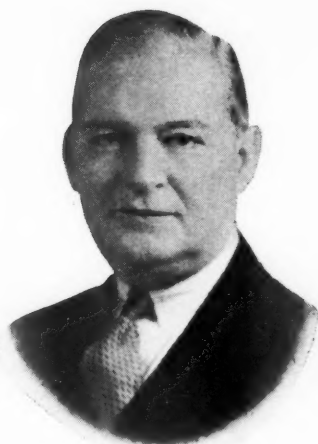
### Track and Third-Rail Bonds

Assignments of the committee on specifications for track and third-rail bonds include a study of welded-bond design and another on methods of welding bonds. This committee cooperates with the heavy-electric traction committee, American Transit Association, the committee on rail of the A.R.E.A., and other technical organizations.

Reference is made in the report to information obtained by the sub-committee on power of the heavy-electric traction committee, A.T.A. According to this abstract, the manufacturers seem to be of the opinion that it is not practicable at this time to compile a standard for U-shaped welded bonds. It also states that one manufacturer has recently made a laboratory study of changes in the crystalline structure of the rail where welded bonds have been applied to rails which have had heat treatment of the ends in the manufacturing process. The tests indicated an unfavorable reduction in hardness of the heat-treated rail ends, due to the operation of attaching the bonds by means of gas welding. It has also been found that where heat treating is done in the field, after the application of the bond by any process, it is possible seriously to damage the bond conductor unless it is



Edward Wray  
President



Moffett  
H. A. Matthews  
Senior Vice-President



E. A. Oas  
Junior Vice-President



John McC. Price  
Secretary-Treasurer

### Newly Elected Officers of Railway Electrical Supply Manufacturers' Association

ton, welding engineer, Norfolk & Western, who pointed out that cracking as well as loss of weight is to be expected from corrosion. R. Beeuwkes, electrical engineer, Chicago, Milwaukee, St. Paul & Pacific, mentioned a bronze cable which had cracked after having been in service 1½ years in salt water air on steam operated railroad near Seattle, Wash.

H. F. Brown, stated that the problem of cracking or so-called "notching" of supposedly corrosion-resisting wires and cables is a serious problem and outlined tests to be made on the New Haven in the near future in this field. J. M. Trissal, electrical engineer, fixed property, Illinois Central, suggested that investigations might be made on this subject by the newly created Division of Engineering Research. The committee agreed to follow through on this suggestion.

### Bibliography

Included with the reports of the Engineering Division, Electrical Section, is a bibliography on applications of electricity to railroads. It includes both American and Foreign publications and covers the period from July, 1936, to June, 1937.

### Election of Officers

H. F. Brown, assistant electrical engineer, New York, New Haven & Hartford, was elected chairman of the Electrical Section, Engineering Division, and D. B. Thompson, mechanical and electrical engineer, New York Central, was elected vice-chairman. K. H. Gordon, foreman, electrical department, Pennsylvania, J. H. Andreucetti, electrical engineer, Chicago & North Western, and R. P. Winton, welding engineer, Norfolk & Western, were elected to the Committee of Direction. A new committee on nominations was elected consisting of S. D. Kutner, assistant engineer, New York Central; G. M. Griffith, electrical engineer, Atlanta, Birmingham & Coast; L. S. Billou, assistant electrical engineer, Baltimore & Ohio; W. M. Vandersluis, general superintendent, telegraph and signals, Illinois Central; and C. P. Taylor, electrical engineer, Norfolk & Western.

### Railway Electrical Supply Manufacturers' Association

At a business meeting of the Railway Electrical Supply Manufacturers' Association, the following officers

were elected to serve during the ensuing year; President, Edward Wray, publisher, Railway Purchases and Stores; senior vice-president, H. A. Matthews, Peerless Equipment Company; junior vice-president, E. A. Oas, General Electric Supply Corporation; secretary-treasurer, John McC. Price, Allen-Bradley Company; Executive Committee for three years, L. A. Spangler, Westinghouse Electric & Manufacturing Company; A. L. McNeill, The Okonite Company, and H. A. Morrison, *Railway Electrical Engineer*.

### Pioneers Club

The Pioneers Club held its annual dinner on Wednesday, October 27. The following list of officers was elected to serve for the ensuing year: Chairman, George R. Berger, The George R. Berger Company; secretary-



George R. Berger  
Chairman, Pioneers Club

treasurer, Otis B. Duncan, The Otis B. Duncan Company; chairman, membership committee, A. W. Donop, Peerless Equipment Company; chairman, memorial committee, J. A. Andreucetti, electrical engineer, Chicago & North Western; chairman, entertainment committee, G. H. Scott, Safety Car Heating & Lighting Company; chairman, nominating committee, W. A. Ross, Pyle-National Company.

# Government Ownership Attacked

Two books issued this week discuss issue; Sorrell denies it is inevitable; Middleton probes foreign roads

**T**HE question of government ownership of the United States railway network is further clarified by two new books published this week under the sponsorship of the Transportation Conference, a constituent body of the Railway Business Association. A detailed discussion of the "imminence" of government ownership in the light of present-day economic and political conditions and conclusions as to the "inevitability" and "desirability" of such ownership in this country comprise "Government Ownership of Railways for the United States,"\* written by Lewis C. Sorrell, professor of transportation, University of Chicago, and advisor to the Transportation Conference since 1932. Constituting what might be called an "object-lesson" upon which Doctor Sorrell's conclusions might draw source-material, an analysis of experiences abroad in both government and private ownership and operation, together with numberless and varied individual combinations of both, is presented in "Railways of Thirty Nations—Government versus Private Operation,"\* by P. Harvey Middleton, secretary, Railway Business Association.

The background, aim and function of the former publication are explained in its foreword, wherein it is pointed out that the work climaxes surveys of world experience with ownership and operation of railroads, together with investigation of "railway traffic and finance, the development of competing forms of transport, the determination of the public interest in carrier regulation, and the equity of existing state and federal policies relating to the several agencies of transportation." Mr. Middleton's preface characterizes his book's aim as one of analyzing the history and development of the railways of all important countries with special emphasis on the reasons that have caused them to build their own railways or take them over from private operators. Summaries of each book follow:

## Is Government Ownership Imminent?

Doctor Sorrell, to establish the timeliness of re-introducing the subject of government ownership, marshals a list of observations which point to an undercurrent of danger for the continuance of private ownership of the carriers. While admitting that there is at present no important vocal demand for government ownership (as, it may be recalled, was true immediately after the World War) he nevertheless lists the following factors as tending to threaten private management: (1) Organized labor's stand for government ownership. (2) The possibility of railway investment groups espousing government ownership as a means of salvaging their investments. (3) The support of measures by various groups which, while not direct attempts at government assumption of rail transport, tend to obstruct the continuance of private ownership. (4) The indifference of the general public and its willingness to "imbibe considerable doses of government patent medicine as a specific for all economic ills." (5) The unstable political situation

and the possibility of opportunism. (6) Partial loss of private business' prestige.

As a further step in laying groundwork for his thesis, Doctor Sorrell, after analyzing the various forms and combinations of government ownership and operation in conjunction with private interests, establishes the concept that true government ownership, as understood by most interested parties in the United States, means federal ownership and operation of substantially all of the railways through a government-owned corporation. He further recalls that the three government ownership bills introduced in the 74th Congress in 1935-6, and treated in the first report of the Federal Co-ordinator of Transportation, which are evidence of contemporary thought on the ownership question, proposed such a combination of ownership and operation by a government-owned corporation. Such departures from this set-up as proposed by the union-sponsored Plumb Plan of 1919 which, briefly, called for government ownership and private operation, he rejects as irrelevant to present-day discussion.

## Special Interests and Public Interest

Swinging into his major arguments, Doctor Sorrell maintains that neither special interest nor the public interest would be promoted by adopting a policy of government ownership. The principal special interest groups he lists as railway employees; railway investors; railway managements; railway shippers and patrons; taxpayers; railway supply industries; and the highway, waterway and airway competitors of the railroads. Concerning their fate under government assumption of rail transportation, the writer avers: "There exists no assurance that any of these groups would realize important gains from the adoption of government ownership of the rail carriers, and there is much probability that all of them would occupy a less advantageous position as a result of that policy."

It is the public interest, however, which should be the controlling weight in this question, Doctor Sorrell insists and, after consideration of fundamental policies, character of service, economy, capital, operating costs, management, improved service, risks of ownership, and political and other factors, he arrives at the conclusion that "under the existing economic and political conditions which now obtain and probably will prevail in the United States for some time, the public interest in railway transportation is more likely to be served by continuing, under adequate regulation, the system of private railroad organization than by resorting to government ownership and operation of these carriers."

The author is careful to avoid any looseness in the concept of "public interest." "It cannot be assumed that it is identical with the claims and desires of special interest groups," he declares. "Nor can it be determined by reference to such general doctrines as state socialism, the proper functions of the state or the respective spheres belonging to government and to business. As it pertains to this question, the public interest in rail trans-

\* Both books are published by Prentice-Hall, Inc., New York.



port is sought in the attainment of a reasonable balance between the service offered to the public and the cost of performing it, a fair distribution of the costs in the prices charged to users, and the maintenance of progress in the art of railroading. Whether private or government enterprise is better calculated to promote these ends is a question that involves many intangibles, and judgment must be entered upon the probabilities in each case. In view of the existing economic and political conditions in the United States, the judgment is that the public interest will be better served by continuing the regime of regulated private ownership and operation than by adopting government management."

### Government Ownership Inevitable

Terminating thus his discussion of the desirability of government ownership, the author proceeds to the consideration of his second topic—*inevitability*. He has already admitted that the issue is imminent. He further admits that current railway earnings and the outlook for investors is not reassuring. But such a state of affairs does not prove the *inevitability* of government control; it rather points to the need of a change in attitude on the part of special interests concerned, he claims. "The economic factors that determine railway incomes,—such as volume of traffic, rates, revenues, and costs—are not unalterable; the political complex that selects the railroad industry for discriminatory treatment, and thus discourages investors, is not unchangeable. This industry is not confronted by forces too powerful to be mastered."

### Cites British Experience

To support this contention, he makes reference to British experience in the dark days after the war when strong forces for government ownership of the major railroads were halted by the successful *rapprochement* effected through the Act of 1921. In summary, the author maintains that "it has not been proved that the commerce of this country cannot, or will not, yield to private railroads those levels of rates and revenues which are properly remunerative to the employed capital and labor."

After a brief analysis of transport experience abroad, he points out that, since the dominant motives to government control which obtained in foreign countries do not exist in the United States today, any attempt at parallelism would be dangerous. In addition, "nothing in the observed results of government ownership and operation abroad recommends that policy to this country."

In conclusion, Doctor Sorrell asserts: "Private ownership-operation of the railroads is the desirable policy for the United States, whether viewed from the standpoint of the special interest groups most directly concerned or from that of the public interest. Notwithstanding the patent financial difficulties facing the rail carriers, provided there exists the will to avert it, government ownership of this industry is neither necessary nor inevitable."

### Experience in 30 Nations

Since the major part of Mr. Middleton's book is devoted to the setting-forth of facts and figures interpreting the complicated skein of forms and combinations of both government and private ownership in 30 important countries, any attempt to summarize his material would be

an abortive effort. Suffice it to state that every hue and shade of all-private, all-government, quasi-private, quasi-government and infinite combinations of both is interpreted in the light of real experience abroad.

It is in Mr. Middleton's summary that the meat for consideration of the government ownership question lies. The conclusion which would seem to have the most direct application to the question of "imminence" of government ownership (as postulated by Professor Sorrell) is the author's interpretation of the factors leading to the acquisition of railways by a large group of foreign governments. Among these are included the necessity of quick action for military purposes, as in Japan and India; overly-sparse settlement of new lands and the desire for speedy colonization, as in Australia and South Africa; accomplishment of political unity by transportation unity, as in Germany; the fear of domination by foreign capital, as in Holland; the nature of the topography and other geographical factors, as in Norway and Sweden.

Since, as Mr. Middleton points out, these and other factors discussed bear little or no relation to conditions obtaining in the United States, efforts here toward government ownership based on foreign experiences would be entirely unfounded. In illustration of this point, he claims that it would be just as logical to argue that, since the trend in a great part of the world is toward some sort of dictatorship, we should therefore abandon the thought of continuing democracy and take preparatory steps to follow the trend. He further maintains: "Any thoughtful student of the world development of steam transportation must conclude that neither public interest nor national welfare is to be served by any set system of ownership, operation, or regulation, but that every country must appraise its own physical, political, and economic conditions and adapt to its ascertained requirements the type of ownership best suited to its needs."

### Results of Government Ownership Abroad

Mr. Middleton's conclusions as to the results of government ownership and operation discussed in detail through his book may be summed up in his judgment "that the operation of railways at a deficit is, with a few notable exceptions,—such as Japan and South Africa—inevitable under government ownership and operation and that there are no compensating advantages of sufficient importance to offset the lack of initiative inherent in political management and the added tax burden which generally accompany the administration of railways by the state."

More specifically, he adds to deficits the problem of political corruption and criminal disregard of those deficits which are apparent in many government railway operations.

### Conclusions

But apart from such failures of government control, the chief reason for support of the continuance of private ownership in this country set forth by the author is the fact that special conditions justifying government ownership, which obtain elsewhere, simply do not apply here. As he points out, private ownership has been eminently successful in the United States and Great Britain, which together operate one-third of the world's trackage. Therefore, it would be foolish to attempt to change this policy, since in neither of the two countries is national safety a primary consideration and in both the "density of population and of traffic offer reasonable assurance of a return upon the capital employed."

# Rate Hearings Begin November 29

Commission creates new division to handle case which is docketed as Ex Parte 123

WASHINGTON, D. C.

**E**XPEDITED handling of the railroads' petition for a 15 per cent increase in freight rates and a 25 per cent increase in Eastern coach fares was indicated this week when the Interstate Commerce Commission created a special division to handle the case and set November 29 as the date for initial hearings at Washington, D. C. The commission made no distinction between the freight-rate and passenger-fare aspects of the case, docketing both, as well as the similar petition filed on November 6 by the American Short Line Railroad Association, as "Ex Parte No. 123, Fifteen Per Cent Case, 1937."

The railroad proposal was outlined in the *Railway Age* of November 6 wherein the few exceptions to the general 15 per cent increase in freight rates were listed. It is estimated that favorable action on the whole proposal would bring additional revenues of about \$507,000,000 a year.

The commission's new division which has been created for the case will be known as Division 7, consisting of Commissioners Aitchison, Porter and Caskie. Commissioner Aitchison was the lone dissenter in the recent Ex Parte 115 decision. In addition to setting the hearing date and announcing the new division the commission's notice states that "As suggested by the petition, and as required by law, the cooperation of the state regulatory bodies will be invited."

## Support of Labor Expected

The policy of the trucking industry is not yet fully determined but it is anticipated that highway carriers will move to increase their rates in the same percentages as the railroads, and to this end various regional organizations in the trucking field have been holding conferences. It is understood that the attitude of American Trucking Associations, Inc., will be formulated at its convention in Louisville, Ky., next week. That the railroad petition will have the support of organized railroad labor was indicated this week when George M. Harrison, chairman of the Railway Labor Executives Association, said he felt that "the present demands are justified and necessary." Mr. Harrison prefaced the above with a reference to labor's past policy of non-interference in rate matters, adding however, that the attitude of labor in the present case would be discussed at a meeting in Chicago on November 12.

## A.A.R. Explains Railroad Needs

Meanwhile the Association of American Railroads has issued a booklet outlining "The Need for Increased Railroad Revenues" and pointing out how "Prosperous Railroads Are Essential to a Prosperous Nation." In the latter connection it is asserted that prosperous railroads "mean stable employment, substantial tax payments, real contributions to genuine business recovery—spread throughout every state and almost every county in the Union." Also, they mean efficient service for all industry; and the crisis which railroads now face "is

not a crisis brought on by a failure of service or a lack of efficiency."

There follows references to plant improvements since the World War during which period the lack of any boom in railroad earnings precluded retirement of debt or the accumulation of reserves. Thus, with the coming of recovery after 1932 the railroads have had to face a 40 per cent increase in prices of things they buy, a 25 per cent rise in taxes and wage increases of approximately 18 per cent. At the same time "freight rates and passenger fares have gone down until the revenue for hauling a ton of freight one mile averages less than one cent; for hauling a passenger one mile, less than two cents—so that today in spite of better service and increased operating efficiency, the margin between income and outgo has been squeezed so thin as to imperil the future operation of railroads as self-supporting, tax-paying, economical and efficient contributors to our national prosperity."

## Would Not Restore Pre-Depression Level

If the commission grants the increases sought, the pamphlet continues, average rates would not be restored to pre-depression levels—for freight service they would be about as in 1930 and for passenger service, about the level of 1933. "The savings that have been passed on to shippers and travelers in lower rates" since 1921 are such that had the 1921 level applied to 1936 business, freight revenues in the latter year would have been up \$1,021,000,000 or 31 per cent; and passenger revenues would have been increased by \$280,000,000 or 68 per cent. Had the traffic in the 1922-1936 period moved at the 1921 level of rates the aggregate gross of those years would have been greater than it actually was by "nearly 13 billion dollars—a sum which exceeds the total funded debt of all the railroads in the country."

The \$664,789,000 rise in costs since May, 1933, as mentioned in the petition, is broken down into the following elements: Increased cost per year resulting directly from operation of new laws (unemployment compensation law and pension tax), \$111,037,000; increased cost per year resulting from rise in prices of materials, supplies and fuel, \$275,324,000; restoration in 1935 of 10 per cent wage deduction, \$174,961,000; recent wage increases, \$133,918,000. From the total of these \$695,240,000 there is deducted the \$30,451,000 annual saving resulting from the discontinuance of voluntary pension systems.

## Present Conditions Bring Cuts in Forces and Buying

Following further discussion of the downward trend of earnings is the pamphlet's section on "The Broader Public Interest." There it is pointed out how railroads, as large purchasers, "can become still greater contributors to general national prosperity;" how "there can be no full recovery from depression until our railroad systems are earning the revenues necessary to meet their needs." Under today's conditions railroads "are com-



pelled to cut down forces and curtail purchases." Also, the ramifications of railroad investments make the plight of the carriers "everybody's business"; and the present situation, with "the largest percentage of mileage ever in the hands of the courts at any one time," threatens to become worse "since many railroads not yet in the hands of receivers or trustees are not currently earning their fixed charges."

The pamphlet closes with an explanation of the rate proposal, followed by the assertion that such increases "will not be a burden upon general commerce, but will help to insure the adequate and efficient transportation, the prosperous and progressive railroads, without which we cannot have a prosperous nation."

The increases specifically authorized in Ex Parte 115, have not yet become effective, as it was impossible to complete the necessary preliminaries for making them effective November 10, as originally planned. Tariffs are now being filed to become effective November 15. Other tariffs effective December 15 are being filed on other commodities with respect to which Ex Parte 115's modification of outstanding orders now permits such treatment. In connection with these Ex Parte 115 increases the commission has issued an order granting, with certain time limits, for subsequent adjustments, the fourth section relief required to permit the changes to become effective.

## Fire Association Meets at Cleveland

(Continued from page 680)

handling and, in some cases, proper manufacturing processes to reduce hazards. "Looking over the records for the last 30 years," he said, "we find that compliance with the bureau's regulations has decreased fires and claims incidental to the transportation of dangerous articles. However, shippers and carriers' employees at times become indifferent to the lessons learned previously and fire loss in transportation continues."

General discussion of the subject led to consideration of the fire hazards of air-conditioning equipment. Members present reported that they had never experienced nor heard of a fire in railway air-conditioning apparatus, ducts or filters. This record is a decided contrast to the many fires which have been caused by air-conditioning equipment in theatres and other buildings and

it was felt that the railroads' record was due to frequent inspection and the periodic cleaning of filters and ducts. The possibilities of liquefied propane gas as a fire hazard were discussed. To date, no fires have been caused by this gas. It was reported that in two wrecks, cylinders containing the liquid were torn from cars and hurled considerable distances but the cylinders were not damaged and no gas escaped.

## Snow Melting Devices

The committee on snow melting reported that "Probably the safest heater from all standpoints is the one using electricity as a heating medium. These have been tried and were efficient, except in the matter of cost. The fire hazard is made negligible once the installation is properly made."

"Illuminating gas, piped to burners permanently fixed under the rails during the winter season has proven to be efficient and reliable and the cost is not excessive. Aside from the hazard of escaping gas from leaky or broken pipe lines, which can be prevented by ordinarily good maintenance, this method presents no great danger from fire. A supply of gas from city mains, however, is not usually available except at large terminals and the use of this method, therefore, is limited to comparatively small proportions. The rapid and varied development of the use of propane, however, apparently gives promise that the advantages of gas fire burners can be extended to all points on the railroads."

"The type of switch heater that we are most interested in is the oil burner, involving as it does, the storage and handling of oils ranging from kerosene to casing head gasoline. There are various types of burners used. At important junction points, where many switches are located in a comparatively small area, the fuel is piped from a large storage tank to nozzles or perforated pipes permanently fixed under or alongside the rails. In the operation of this system, the oil is turned on for 10 or 15 seconds and then shut off, enough fuel being discharged to burn for about 15 min., during which time the operator has no control over the flame."

"In considering the type of fuel used, we must remember that the clearing of switches is carried on under the worst of weather conditions. A fuel that will burn despite blizzard, sleet, high winds and extreme cold must be in the first place, easy to ignite and unless it is used in apparatus that employs a wick, must be a low flash point, highly volatile oil."

\* \* \* \*

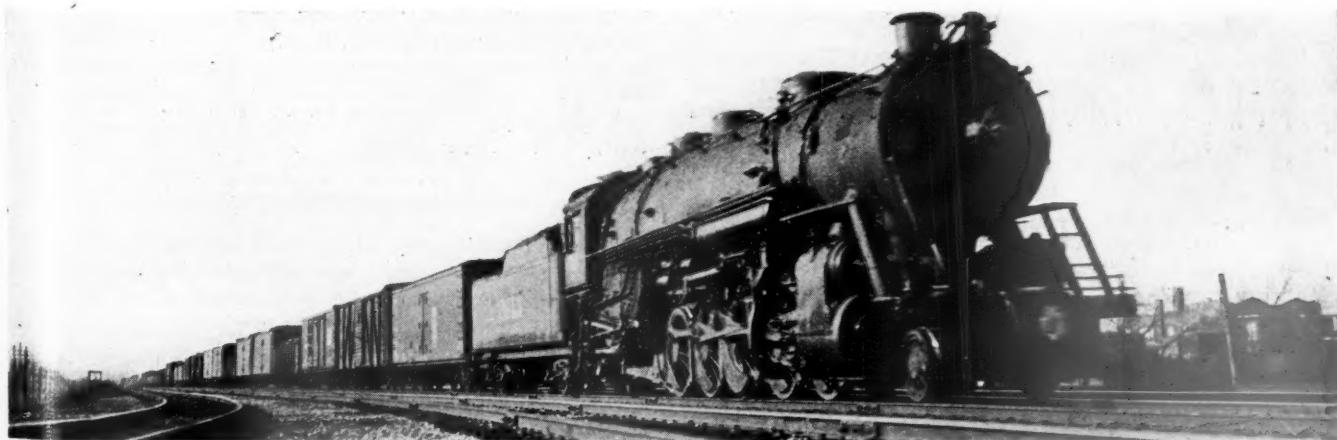


Photo by Collons

Illinois Central Transfer Run on the Belt Railway, Near 75th Street, Chicago



# Passenger Officers Hear Praises

Pelley and heads of four roads emphasize passenger department importance, laud accomplishments

**T**HE railroad situation demands a degree of courage on the part of managements which so far they have not shown, if they are to avoid the tragedy of government ownership. So Fitzgerald Hall, president of the Nashville, Chattanooga & St. Louis, told the American Association of Passenger Traffic Officers at their annual meeting in Miami on November 8-9. Mr. Hall was the principal speaker at the dinner held in connection with the convention. He contrasted the courage passenger traffic men had shown in going out to rebuild their business after 75 per cent of it had disappeared with the timidity which he ascribed to managements for conceding recent wage increases to organized employees.

As a result of these concessions, he continued, every American railroad is in jeopardy. Increased rates are only a "stop gap" and not a permanent solution. He advised the railroads to take a lesson from the behavior of the South in Reconstruction days, meeting adversity with courage and determination. The roads are in for a "long fight, a hard fight and an uphill fight and they will need something better than compromise to win it."

## Passenger Departments' Public Relations Job

He said that the railroads' problems would be solved when they received fair treatment from the public; and to secure this they should "take their case directly to the people." Because of their contacts with the public, passenger departments can do more than any other to promote a friendly attitude on the part of the public.

There is not one rule of law for Baptists, another for Methodists and a third for Episcopalians—but this differentiation does exist in the treatment of the various agencies of transport, with the most restrictive rule of all being applied to the railroads. And as for consolidation—when public authority will "consolidate" its laws dealing with transportation, then the several agencies can consolidate and co-operate with each other.

## Passenger Business No Longer Scorned

J. J. Pelley, president of the Association of American Railroads, L. R. Powell, Jr., receiver of the Seaboard Air Line, G. B. Elliott, president of the Atlantic Coast Line, and Scott Loftin, receiver of the Florida East Coast, also attended the sessions and spoke informally. Mr. Pelley said he remembered when railroad executives, himself included, considered passenger business as "somewhat unimportant," but he changed his opinion when he began his association with the New Haven; and now the appreciation of this branch of the service is general. He complimented the passenger officers (as did also Messrs. Elliott and Powell) for their persistence in carrying on despite discouragements, and noted that these efforts have been rewarded by a genuine revival in traffic.

He said that the matter of public relations was one of the most important tasks of railway management and mentioned the A. A. R. program to this end, inviting

the constructive criticisms of the passenger officers. He added that the staff in Washington realized that it could do no more than give general direction to this program; that most of the work would have to be done, as in the past, by the individual carriers. He said that the Association's advisory committee on public relations had a widely representative membership, and he urged the passenger officers to make their opinions known by contact with these committee members.

## The Need for More Revenue

Defining public relations as "the sum total of all contacts by all railroad employees with all the public," he said that most of these contacts came under the jurisdiction of the passenger department and it was only through this department that a large part of the public could be effectively reached.

Characterizing the passenger officers as "a brave lot of fellows," he dwelt upon the serious need of the railroads for more revenues without waiting for a revival in traffic. Some of these increased revenues should come from passenger traffic, he added, and expressed the belief that passengers could be "sold" on making such a contribution because of the great improvement in service. In any event, the railroads need the money so badly that they at least must try to get it—if increases are not successful, reductions can then be made.

## Tribute to Memory of W. C. Hope

The meeting was opened with a tribute by President George James (A. C. L.) to the memory of Secretary W. C. Hope, who died on the special train en route to Miami for the convention. Following this, the presentation of a gavel to the presiding officer (a tradition with the A. A. P. T. O., the gavel in each case being made from wood taken from the recipient's birthplace or other location of sentimental associations) was made by J. B. Mordecai (R. F. & P.).

Mr. Powell traced the nature and extent of passenger traffic revival, while informal remarks of Messrs. Elliott, Loftin and F. P. Fleming (attorney to receivers, S. A. L.) were primarily in the nature of a welcome from hosts to guests while the last-named speaker said that Ponce de Leon was "Florida's first passenger traffic manager," and closed his remarks with a tribute "to the winter tourist—God bless him!"

## Motor Carrier Act Proving Helpful

The committee on motor coach service reported that the Motor Carrier Act had gone a long way toward stabilizing this business, largely eliminating "wildcat" competition. However, the Motor Carrier Bureau is handicapped in its work by lack of an adequate appropriation. The Motor Carrier Act has fostered greater harmony in the relationships between railroads and bus operations, a typical instance being the voluntary cessation of bus operations at sub-standard rates between St. Louis and Chicago; and indications are that

when railroad rates are changed, bus rates will be similarly adjusted to maintain existing differentials. Railroad operation of buses has continued to increase; and reductions in railway rates have drawn passengers from private automobiles rather than from bus lines. The committee noted a tendency of railroad-controlled bus operations to be confined to the line's own territory rather than to invade that of other carriers.

### Sales Talk Made "Off the Record"

The most prolonged and vigorous discussion of the convention revolved around the reports of the committees on improved service and on methods stimulating sales. The latter, presented by Chairman J. W. Switzer (N. Y. C.) was "off the record" and cannot be reported. Chairman W. B. Calloway (B. & O.) spoke for the committee on improved service and equipment. He mentioned briefly some of the new trains placed in service during the past year and stressed the fact that equipment is now being designed with the customers' desires in mind, rather than solely from a standpoint of mechanical efficiency. He spoke of the many instances of successful modernization of old equipment, and said that this means would have to continue to be a principal reliance for improving service to the public because of the obvious impossibility of rapidly replacing existing equipment.

He noted with approval the development by the Pullman Company of new types of room cars and foresaw a tendency toward such cars and away from those with open berths—at the same time complimenting the Pullman Company for its advertising campaign.

### Modern Trains Acclaimed

He spoke of the great public interest in streamlined locomotives and said that the modern trains have in all cases been rewarded by profitable traffic volume.

O. P. Bartlett (S. P.) reported the "delight" of passengers in tasteful color schemes, and their favorable reaction to neat sanitation, tight coupling, larger vestibuling and improved trucks and seats. He told of the extensive tests which had been instituted to produce a design of a seat which would provide comfort regardless of the peculiarities of the passenger's physique. He drew attention also to the remarkable degree of co-operation of the railroads where high speed trains are joint enterprises; and even among competing lines—such lines sending business to competitors whenever they cannot provide the accommodations desired.

One speaker dwelt on the reconditioned standard-equipment type of train put on to care for the "overflow" from Diesel-streamliner schedules. Such a train, it was stated, served the purpose of giving a quick solution to a pressing problem—but it is not highly profitable because of limited capacity necessitated by holding down the number of cars to enable steam locomotives to make high speeds with standard-weight equipment.

### A New Streamliner and Pullman Improvements

E. D. Osterhout (Rdg.) described the double-end stainless-steel steam streamliner which his company will place in service between New York and Philadelphia, about December 1, containing 325 seats (approximately 100 of them in lounge space) with provision made for the addition of cars if traffic develops sufficiently to require them. He related that the company had retained a well-known designer to assure interiors which will meet with public approval.

E. P. Burke (Pullman Co.) described the "Roomette"

car and told of the success it is meeting in experimental service. The car, he reported, is drawing its patronage from open-berth patrons rather than those normally using larger and more expensive room accommodations, and he foresaw it as one possible solution to the problem of the unoccupied upper berth. He also mentioned four or five other experiments which the Pullman Company is making which for the most part are still in the mechanical testing stage, not the commercial as yet. The company, he explained, does not recommend the Roomette for night occupancy for more than one person; although such occupancy is provided for at a tariff  $1\frac{1}{5}$  times the single-occupancy rate (which is 140 per cent of the lower berth rate, with a minimum addition of \$1 to the rate for a lower).

### Light Weight Rail Cars

There was little new to report upon the year's development of light weight rail cars. C. E. Bell (S. A. L.) told of the "rail bus" cars used in branch and local service by his road. These cars have seats for 57 passengers and 20 ft. of space for "head end" traffic, have rapid acceleration and deceleration so that they can average 50 m.p.h. including frequent stops, and can be operated for 29 cents per hour.

Some speakers expressed the wish that rail cars might be provided capable of pulling a trailer, if occasion demanded—without going too far in the direction of additional weight and power. It was stated that such cars were available, and one speaker said that such a slightly larger car was quite sufficient; if traffic outgrew it, then a steam train could be profitably substituted.

### Experience With New Trains

There was some discussion of the costs of Diesel as compared with steam power, the element of uncertainty arising from the fact that it is not known how long the former will last. Instances were cited of Diesels having replaced several steam locomotives. A. H. Seaver (N. Y., N. H. & H.) told of his road's experience with the train it has equipped with Besler steam motors. He said this train costs 50 cents per mile to operate and that its performance might be even better, given cars of lighter weight. The road's Diesel streamliner, the "Comet," he said, continues in public favor, with no tendency for its novelty to be outgrown, its gross per mile averaging more than twice its operating expenses. Some speakers noted a recent upward tendency of maintenance costs of Diesel streamliners which had seen several years' service.

H. F. McCarthy (B. & M.) related that road's experience with its streamlined "Flying Yankee" and the steam-powered "Mate" (discontinued for the winter) with which the road had to supplement its "Flying Yankee" to take care of the demand for modern, high-speed service. The limited number of seats available (130 in the Flying Yankee), he explained, was sufficient for the old basis of fares but was inadequate after the rate was lowered. It was difficult to know what capacities to provide in such equipment, he said, unless the passenger department could know what the rate base was to be, and hence could predict with some accuracy the probable volume of traffic. He paid high tribute to the practicability of the New Haven type of light-weight modern coaches, of which the Boston & Maine also has several. He ventured the opinion that the new equipment the railroads have provided has done more to improve public relations than the work done directly with better public relations as its objective.

Officers of other roads with modern streamlined trains



reported their experience with them, among them L. M. Jones (C. M. St. P. & P.), A. Cotsworth, Jr., (C. B. & Q.), J. V. Lanigan (I. C.) and J. W. Switzer (N. Y. C.) Mr. Cotsworth said the more experience the Burlington had with its Diesel trains the better it liked them. The road had run 3½ million train-miles with these trains and had found them highly dependable; in 500 days of both-direction service between Chicago and Denver there had been but 10 failures. And the popularity of the trains continues. He recommended to the attention of the delegates the report of addresses by Ralph Budd (president, C. B. & Q.) and H. L. Hamilton (president, Electro-Motive Corporation) on Diesel power published in *Railway Age* of November 6, page 636. Mr. Lanigan likewise reported continued popularity of the "Green Diamond." F. W. Conner (P. R. R.) reported that that company's recently extended electrification had fulfilled its "fondest hopes" in the flexibility and precision of service provided with greatly increased speeds.

A. H. Seaver told of 5 new cafeteria cars which the New Haven will place in service which will seat 53 persons and be operated by a crew of 6 (3 counter-men, 2 bus boys and a woman employee to serve as cashier). The new cars, he said, would not replace existing dining cars but would be used to supplement them on trains having exceptionally heavy coach travel. One of the Eastern lines reported an attempt to install tray service meals in coaches, but without the favorable results obtained by some western lines. Several roads were heard from as to the growing seriousness of dining car losses because of rising food prices, higher wages and the consequent necessity for raising prices of meals. One speaker urged competing lines to act together so that increases in meal prices might be made sufficient to offset these higher costs.

#### Dining Car Economies

C. H. Mathews, Jr. (P. R. R.), related how that company had increased its revenues from sandwiches and coffee sold in coaches by having waiters who did this work and nothing else. He told also of savings effected by changing menus less frequently, variety being preserved by having different menus on different cars.

C. E. Bell said that the S. A. L. changed menus about once a month, and when a menu was transferred from one car to another, supplies were shifted at the same time, thus reducing wastage. C. J. Collins (U. P.) told of three types of meals it served—the standard variety, the "coffee shop," and the "Challenger type" (3 meals for 90 cents). He said the operating ratio of the latter was the most favorable of the three due to the huge volume of business done, the absence of table cloths, and the absence of a necessity for carrying an expensive variety of supplies. The average "Challenger" dining car check, he said, was 46 cents.

#### Attracting European Travel

There was some expression favoring the reclining chair seat to the bucket type. One road emphasized the willingness of the public to pay extra fares for coach travel in streamliners to the Pacific coast, experience showing that there was almost as much demand for such reservations as for Pullman space.

Joseph Mayper (Trans-Atlantic Passenger Conference) reported on the development of traffic in which the steamship lines and the railroads have a mutual interest, particularly in the promotion of tourist travel in America by Europeans. An unofficial total of such travel

for the fiscal year ended last June, he said, was approximately 70,000, which would be an increase of some 40 per cent in two years. He told of the efforts of the steamship lines to advertise American travel to Europeans, and recommended:

1. Preparation of a new folder by the railroads for distribution in Europe, emphasizing the 1939 fairs.
2. Supply by the railroads of a poster, "See America," for display in Europe.
3. Preparation of sound films featuring scenic spots reached by American railroads, for presentation to European audiences.
4. Establishment in Europe of joint railway information offices such as those which European railways now maintain here.

L. W. Landman (N. Y. C.) also reported on the co-operative activities of the rail and transatlantic lines and said that some of Mr. Mayper's recommendations were already being followed.

#### Change Made in Fraternal Benefit Payments

The delegates passed unanimously a motion that honorary membership be conferred automatically on active members in good standing when they retire on pension. At a meeting of the fraternal society operated in connection with the A. A. P. T. O. (which pays death benefits to contributing members), it was decided to scale the benefits to new members depending upon the years of membership when death occurs (viz., from \$250 for less than five years to \$1000 for more than 15 years).

#### New Officers

O. P. Bartlett (S. P.) was elected president for the coming year and F. W. Conner (P. R. R.) was chosen as vice-president. B. D. Branch (C. N. J.), heretofore assistant secretary, was elected secretary-treasurer succeeding Mr Hope. Chairmen of committees were named as follows: Executive, F. S. McGinnis (S. P.); Association Ticket Paper, R. Thompson (C. & N. W.); Interline Tickets, H. W. Siddall (Transcontinental and Western Passenger Associations); Official Digest of Divisions and Fares, L. A. Blatterman (Wabash); Aviation, C. E. McCullough (P. R. R.); Motor Transportation, P. J. Neff (Mo. P.); Improved Service and Equipment, W. B. Calloway (B. & O.); Docket, C. C. Howard (Erie); Fraternal Society Membership, C. H. Mathews, Jr. (P. R. R.).

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Air Brake Reservoirs from Old Cars Stored on Sections of Old Rail Until Repaired or Scrapped on the New York Central at Ashtabula, Ohio



# NEWS

## I. C. C. Refuses Dailey Application

Majority holds that New York, Ontario & Western needs only one trustee

Reaffirming the decision of Division 4 on July 13, the full Interstate Commerce Commission has denied the application of Vincent Dailey to serve as co-trustee of the New York, Ontario & Western. At that time the Finance Division found that the appointment of Frederic E. Lyford was in the public interest but that Dailey's was not. Mr. Dailey petitioned the full commission for a public hearing, which petition was granted and a public hearing was held.

At the public hearing, the law firm of Root, Clark, Buckner & Ballantine of New York City, representing a group of insurance companies holding an aggregate of \$11,020,000 of the company's bonds, approximately 40 per cent of its outstanding funded debt, urged the ratification of Dailey's appointment. They stressed in particular his general business experience which they stated would be exceptionally valuable in dealing with the situation of coal properties in which the debtor company has a financial interest. This firm had also urged the appointment of Mr. Lyford at the time that his appointment was ratified by the commission.

The report points out that the commission had, in its previous report on Lyford, stated that "it would appear that one trustee should be sufficient to serve properly the interests of all parties; that Lyford's experience includes 13 years with railroads or dealings with railroad problems; that it did not appear Dailey had had any experience of this character; and that in all probability either of the appointees would find it necessary to retain most of the debtor's officers to conduct its operations." "It is contemplated," says the commission's report, "if Dailey's appointment is ratified, that Lyford will concern himself primarily with the operation of the debtor's property with a view of effecting economies and increasing its tonnage and revenue, and that Dailey will, among other things, endeavor to hold the anthracite coal tonnage to the debtor's line, the loss of which is threatened by the cessation of operations of the Scranton Coal Company now in bankruptcy under Section 77-B of the Bankruptcy Act and for whose property no trustee has yet been appointed by the court." According

to the commission the company "is dependent on its anthracite coal tonnage for successful operation."

The report concludes with the expression of belief that the only way the debtor's coal traffic could be increased would be by increasing sales in New York City and that "there is no evidence that the debtor's coal traffic could be increased materially in any other way, nor were any constructive suggestions advanced at the hearing as to the steps which might be taken with this end in view or of other duties which could be undertaken by Dailey after the affairs of the three coal companies have been settled."

Commissioner Mahaffie wrote a dissenting opinion in which he said that "to develop traffic to a basis that will support the rail operations those properties must be, in some way, reorganized, and must be operated on a basis that will enable them to compete successfully with other producers." He went on to say that "Lyford was appointed and ratified as a trustee principally, I think it fair to say, on his qualifications as a railroad operator. An efficient railroad operator may not, necessarily, be the best possible man to deal with many of the problems confronting a trustee." Chairman Miller and Commissioner Porter joined with Mahaffie in the dissent.

## Joint Board Would Grant T. & P. Truck Application

Joint Board No. 164, composed of Alex Grouchy of Louisiana, has recommended in a proposed report that the Interstate Commerce Commission grant a common carrier certificate to the Texas & Pacific Motor Transport Company, subsidiary of the Texas & Pacific, for the operation of trucking service over specified routes between Shreveport, La., and New Orleans. The service would be confined to station-to-station operations designed to facilitate handling of the T. & P.'s l. c. l. traffic.

## Chicago Engineers to Hear Talk on Streamliners

The Transportation division of the American Society of Mechanical Engineers, Chicago section, will consider the subject "Streamlined Trains" at its next meeting, scheduled to be held at 7:30 p.m. Tuesday evening, November 23, at Room 812 Times building, Chicago. An informal discussion of this subject will be given by Peter Parke, chief engineer, The Pullman Company, who will illustrate his remarks by stereopticon views and a moving picture showing the use of welded alloy steel construction in modern passenger cars.

## New Haven Hearings Are Resumed

Commission hears proposals to sever Old Colony—Cunningham testifies

Interstate Commerce Commission hearings on the reorganization of the New York, New Haven & Hartford were resumed before Commissioner Charles D. Mahaffie at Washington, D. C., on November 9. Testimony included explanations and defenses of plans for reorganization of the property which have been submitted by the Insurance Group, the Independent Bondholders Reorganization Committee, the Old Colony Railroad Company, the Old Colony Shareholders Protective Committee and the Mutual Savings Bank Group.

The hearings brought forth considerable discussion of proposals to sever the Old Colony from the New Haven system, as contemplated in the plan of the Insurance Group which holds \$55,000,000 of New Haven securities. At the September hearings this group did not present a plan but did offer what it called "a series of objections and proposed amendments" to the debtor's plan. This week, however, it filled in that outline into a complete plan which proposes a total capitalization of \$365,000,000, consisting of 58 per cent debt, 18 per cent preferred stock and 24 per cent common stock. Also, in suggesting that the Old Colony be dropped, this plan reaffirms the group's previous stand favoring the development of the New Haven's alternate Providence, R. I.-Boston, Mass., route—"unless some fair and equitable terms are proposed" for the operation by the New Haven of the Old Colony's Boston & Providence.

James H. Brewster, Jr., treasurer of the Aetna Life Insurance Company and chairman of the Insurance Group, stated that the plan would bring about a reasonable capitalization. It would involve annual fixed charges of \$9,300,373 before provision for contingent sinking and capital funds which would bring the total to \$10,699,003.

James J. Kann testified with respect to the plan of the Independent Bondholders Reorganization Committee of which he is chairman and Arthur Garfield Hays counsel. Mr. Kann was followed by Philip Stockton, president of the First National Bank of Boston, Mass., a director of the Old Colony and chairman of the latter's

(Continued on page 701)

## Reveal I. C. C. Finance Practices

Letter indicates decision  
was revealed before  
publication

The Senate subcommittee investigating railroad financing on November 5, read into the record a letter from T. D. Gresham, vice-president and general counsel of the Texas & Pacific, to Herbert Fitzpatrick, vice-president in charge of law of the Missouri Pacific and other formerly Van Sweringen controlled lines, in which he said that Commissioner Meyer of the Interstate Commerce Commission had told him a decision of the Finance Division several days before it was announced to the public. According to Mr. Gresham's letter Commissioner Meyer had given him the information in strictest confidence. Mr. Gresham, who was a witness before the Senate committee on November 5, admitted that he should not have passed on the information, but that he had done so in the belief that it was his duty to report the decision to his superior officer, Mr. Fitzpatrick. The decision dealt with the acquisition of the Fort Worth Belt by the Texas & Pacific in July of 1932. According to evidence presented to the committee, the commission had decided to let the T. & P. purchase the Belt line for \$700,000, but the T. & P. went ahead and disregarded the commission's decision and paid about \$980,000 for the property. Later the commission contested the decision in the courts, but was unable to force the road to rescind the contract.

Commissioner Meyer, when informed of the disclosure of the letter from Mr. Gresham to Mr. Fitzpatrick, issued the following statement:

"Press reports of the proceedings before the Senate Committee yesterday have been called to my attention. I have not seen the record of what actually transpired. At the moment I have no definite recollection of any conversation I may have had with Mr. Gresham. The application, when it reached Division 4, was uncontested, the case was decided on July 20, 1932, and Mr. Gresham's information appears to have been as of a later date.

In contested cases our invariable rule is to give out no information prior to official service of the report and placing it on the press table at the regular hours. In uncontested cases where there is need for the information in order to meet contract or time limitations in connection with the application, information as to the action of Division 4 is frequently, in proper cases, made available immediately after decision and during the time necessary for printing or mimeographing and serving the report itself. This may have been done in this instance. Ordinarily the report in question would have been put on the press table on July 21, but office routine delayed this until July 28."

At a later session of the committee on November 8, a memorandum of Commissioner Meyer's was introduced into the

(Continued on page 701)

## Air Lines Carried 130,296 Passengers in September

The 17 scheduled air lines operating in continental United States in September carried 130,296 passengers and 720,479 lb. of express, flying 54,229,561 passenger-miles and 437,292,739 express pound-miles, according to reports to the Bureau of Air Commerce, U. S. Department of Commerce. In September of last year the 22 lines then reporting carried 101,239 passengers and 652,930 lb. of express, flying 43,509,531 passenger-miles and 330,229,741 express pound-miles. In September, 1936, however, 70.43 per cent of the total seat-miles flown were used as against 65.17 per cent in the same month this year.

## \$61,609,437 Net for Eight Months

August down to \$6,347,307  
from its 1936 figure  
of \$20,979,856

Class I railroads for the first eight months of this year reported a net income, after fixed charges and other deductions, of \$61,609,437 as compared with a net of \$17,473,420 for the first two-thirds of 1936, according to the Interstate Commerce Commission's monthly compilation of selected income and balance sheet items. The August net income was \$6,347,307 as com-

### SELECTED INCOME AND BALANCE-SHEET ITEMS OF CLASS I STEAM RAILWAYS

Compiled from 135 Reports (Form IBS) Representing 141 Steam Railways  
TOTALS FOR THE UNITED STATES (ALL REGIONS)

For the month of August		For the eight months of	
1937	1936	1937	1936
<b>Income Items</b>			
1. Net railway operating income .....	\$50,307,878	\$64,636,593	\$408,217,220
2. Other income .....	10,447,758	11,343,067	90,979,291
3. Total income .....	60,755,636	75,979,660	499,196,511
4. Miscellaneous deductions from income .....	1,728,504	1,511,178	13,714,552
5. Income available for fixed charges .....	59,027,132	74,468,482	485,481,959
6. Fixed charges:			
6-01. Rent for leased roads .....	11,049,240	11,080,029	88,611,488
6-02. Interest deductions .....	40,391,518	41,144,706	325,175,488
6-03. Other deductions .....	221,593	248,917	1,858,058
6-04. Total fixed charges .....	51,662,351	52,473,652	415,645,034
7. Income after fixed charges .....	7,364,781	21,994,830	69,836,925
8. Contingent charges .....	1,017,474	1,014,974	8,227,488
9. Net income .....	6,347,307	20,979,856	61,609,437
10. Depreciation (Way and structures, and Equipment) .....	16,451,078	16,114,630	130,317,463
11. Federal income taxes .....	3,871,169	3,056,727	27,643,617
12. Dividend appropriations:			
12-01. On common stock .....	13,859,452	12,995,649	67,532,612
12-02. On preferred stock .....	2,172,630	3,036,072	13,097,099
<b>Balance at the end of August</b>			
<b>Selected Asset Items</b>			
13. Investments in stocks, bonds, etc., other than those of affiliated companies (Total, Account 707) .....			\$699,794,826
14. Cash .....			430,960,617
15. Demand loans and deposits .....			17,455,110
16. Time drafts and deposits .....			41,560,544
17. Special deposits .....			155,063,300
18. Loans and bills receivable .....			13,551,106
19. Traffic and car-service balances receivable .....			57,515,696
20. Net balance receivable from agents and conductors .....			53,579,154
21. Miscellaneous accounts receivable .....			139,013,012
22. Materials and supplies .....			380,425,708
23. Interest and dividends receivable .....			22,721,114
24. Rents receivable .....			1,977,140
25. Other current assets .....			8,472,419
26. Total current assets (items 14 to 25) .....			\$1,322,294,920
<b>Selected Liability Items</b>			
27. Funded debt maturing within 6 months* .....			\$83,837,698
28. Loans and bills payable† .....			210,648,782
29. Traffic and car-service balances payable .....			79,628,188
30. Audited accounts and wages payable .....			257,916,939
31. Miscellaneous accounts payable .....			98,298,981
32. Interest matured unpaid .....			609,042,706
33. Dividends matured unpaid .....			6,709,403
34. Funded debt matured unpaid .....			477,476,001
35. Unmatured dividends declared .....			15,890,136
36. Unmatured interest accrued .....			107,290,914
37. Unmatured rents accrued .....			33,642,426
38. Other current liabilities .....			22,356,212
39. Total current liabilities (items 28 to 38) .....			\$1,918,900,688
40. Tax liability (Account 771):			
40-01. U. S. Government taxes .....			\$116,016,808
40-02. Other than U. S. Government taxes .....			153,700,762

\* The net income as reported includes charges of \$3,480,268 for August, 1937, and \$26,212,720 for the eight months of 1937, \$1,519,201 for August, 1936, and \$11,662,436 for the eight months of 1936 on account of accruals for excise taxes levied under the Social Security Act of 1935; also includes charges and credits resulting in a net charge of \$2,640,262 for August, 1937, and \$13,050,822 for the eight months of 1937, because of provisions of the "Carriers Taxing Act of 1937," approved June 29, 1937, and repeal of the Act of August 29, 1935, levying an excise tax upon carriers and an income tax upon their employees, and for other purposes. (Public No. 400, 74th Congress.) The charges and credits were not handled in a uniform manner by all the carriers and separate totals are not available. The net income for August, 1936, includes charges of \$3,806,654 and for the eight months of 1936 of \$23,355,712 under the requirements of an Act approved August 29, 1935, levying an excise tax upon carriers and an income tax upon their employees, and for other purposes. (Public No. 400, 74th Congress.)

\* Includes payments which will become due on account of principal of long-term debt (other than that in Account 764, Funded debt matured unpaid) within six months after close of month of report.

† Includes obligations which mature not more than 2 years after date of issue.



# NET INCOME OF LARGE STEAM RAILWAYS WITH ANNUAL OPERATING REVENUES ABOVE \$25,000,000

Name of railway	Net income after deprec.		Net income before deprec.	
	For the eight months of 1937	1936	For the eight months of 1937	1936
Alton R. R.	\$576,273	\$1,066,382	\$340,159	\$836,892
Atchison, Topeka & Santa Fe Ry. System <sup>†</sup>	6,725,031	2,998,314	14,288,699	10,563,388
Atlantic Coast Line R. R.	2,660,139	1,137,669	4,011,916	2,554,586
Baltimore & Ohio R. R.	123,949	860,806	4,690,127	4,065,057
Boston & Maine R. R.	482,960	2,591,896	1,556,407	1,497,997
Central of Georgia Ry. <sup>†</sup>	1,285,989	1,653,095	760,601	1,139,839
Central R. R. of New Jersey	1,063,167	2,240,784	106,994	1,222,017
Chesapeake & Ohio Ry.	21,863,913	24,927,483	27,367,486	30,540,178
Chicago & Eastern Illinois Ry. <sup>†</sup>	633,137	762,655	225,661	368,700
Chicago & North Western Ry. <sup>†</sup>	11,485,901	9,958,405	8,164,736	6,663,529
Chicago, Burlington & Quincy R. R.	1,753,782	1,029,253	4,970,435	4,086,386
Chicago Great Western R. R. <sup>†</sup>	893,355	295,094	539,161	38,010
Chicago, Milwaukee, St. Paul & Pacific R. R. <sup>†</sup>	9,407,361	11,116,337	5,777,376	7,536,176
Chicago, Rock Island & Pacific Ry. <sup>†</sup>	6,831,162	10,431,614	4,124,047	7,569,536
Chicago, St. Paul, Minneapolis & Omaha Ry.	2,116,999	1,383,557	1,721,483	985,877
Delaware & Hudson R. R.	347,937	1,220,767	358,013	486,264
Delaware, Lackawanna & Western R. R.	220,087	952,564	1,457,709	827,556
Denver & Rio Grande Western R. R. <sup>†</sup>	4,877,745	3,896,910	4,111,226	3,127,394
Elgin, Joliet & Eastern Ry.	1,460,597	957,277	2,057,323	1,556,566
Erie R. R. (including Chicago & Erie R. R.)	1,318,071	575,771	3,859,064	3,166,007
Grand Trunk Western R. R.	241,313	287,288	4,635,628	1,040,719
Great Northern Ry.	3,668,039	777,052	6,086,741	3,226,445
Illinois Central R. R.	2,128,807	2,325,114	2,033,536	2,048,047
Lehigh Valley R. R.	974,612	444,401	529,133	1,975,257
Long Island R. R.	1,532,519	231,985	752,734	544,472
Louisville & Nashville R. R.	4,927,158	4,895,982	7,700,909	7,683,124
Minneapolis, St. Paul & Sault Ste. Marie Ry.	3,996,228	3,943,946	3,210,938	3,128,829
Missouri-Kansas-Texas Lines	723,509	1,367,840	66,073	511,224
Missouri Pacific R. R. <sup>†</sup>	4,829,794	6,799,066	2,041,947	3,999,361
New York Central R. R. <sup>†</sup>	7,011,298	2,367,932	17,705,695	13,165,526
New York, Chicago & St. Louis R. R.	1,851,208	1,733,026	2,941,187	2,762,839
New York, New Haven & Hartford R. R. <sup>†</sup>	3,913,782	4,937,161	1,651,303	2,641,947
Norfolk & Western Ry.	21,018,623	19,633,978	24,202,385	22,636,012
Northern Pacific Ry.	2,877,381	5,172,097	724,822	3,068,104
Pennsylvania R. R.	18,165,244	20,111,748	34,752,140	34,689,750
Pere Marquette Ry.	1,324,842	1,264,588	3,029,349	2,954,127
Pittsburgh & Lake Erie R. R.	3,195,416	2,838,292	4,383,679	4,041,804
Reading Co.	5,040,402	3,976,918	7,106,524	6,098,392
St. Louis-San Francisco Ry. <sup>†</sup>	4,242,265	5,402,911	2,144,138	3,255,439
St. Louis Southwestern Lines <sup>†</sup>	658,274	292,837	257,900	111,046
Seaboard Air Line Ry. <sup>†</sup>	2,873,215	4,718,873	1,578,709	3,465,628
Southern Ry.	1,323,024	1,011,735	3,412,214	3,175,319
Southern Pacific Transportation System <sup>‡</sup>	383,793	2,754,506	5,742,823	7,989,288
Texas & Pacific Ry.	1,617,165	839,376	2,391,707	1,617,630
Union Pacific R. R.	5,839,941	6,470,094	10,322,065	10,773,745
Wabash Ry. <sup>†</sup>	1,824,274	1,772,595	396,301	350,809
Yazoo & Mississippi Valley R. R.	264,012	367,645	589,650	24,321

<sup>†</sup> Report of receiver or receivers.

<sup>‡</sup> Report of trustee or trustees.

<sup>§</sup> Includes Atchison, Topeka & Santa Fe Ry., Gulf, Colorado & Santa Fe Ry., and Panhandle & Santa Fe Ry.

<sup>¶</sup> Includes Boston & Albany, lessor to New York Central R. R.

<sup>||</sup> Includes Southern Pacific Company and Texas & New Orleans R. R. The operation of all separately operated solely controlled affiliated companies, resulted in a net deficit of \$2,132,228 for eight months of 1937 and \$2,280,333 for eight months of 1936. These figures are not reflected in this statement.

\* Deficit.

pared with \$20,979,856 for August, 1936.

Seventy roads reported a net income for the eight months, while 62 reported deficits; in August 61 reported a net income and 71 reported deficits. Last year only 53 roads had an August deficit. The consolidated statement and a statement of the net of roads having annual operating revenues above \$25,000,000 are given in accompanying tables.

## I. C. C. Denies New Jersey's Lighterage Case Plea

The Interstate Commerce Commission has denied the petition of the state of New Jersey for a reconsideration of the New York harbor lighterage case.

## Fusion-Welded Tank Cars

E. I. Dupont de Nemours & Company has applied to the Interstate Commerce Commission for authority to construct and operate in experimental service 12 additional electric-arc-fusion-welded tank cars to be used in transporting nitric acid.

## Bus Route Purchase

The Chicago, South Shore & South Bend has applied to the Interstate Commerce Commission for authority to pur-

chase for \$1,000 operating rights of a La Porte, Ind.-Michigan City bus route of the Indiana Motor Bus Company.

## NIT League to Meet November 18 and 19

The National Industrial Traffic League will hold its thirteenth annual meeting at Chicago on November 18 and 19. William M. Jeffers, president of the Union Pacific, will be the speaker at the league's annual luncheon on the first day.

## Rail Employment Down in October

Total employment on Class I railroads, excluding switching and terminal companies, fell 1.53 per cent, with maintenance of way forces dropping 6.22 per cent, during the one-month period from mid-September to mid-October, according to the Interstate Commerce Commission's preliminary figures on the situation at the latter time. The total as of the middle of October was 1,115,919, as compared with a September figure of 1,133,227.

Employment among all classes, except the transportation groups, fell off during the month. Increases in these groups were: Train and engine service, 1.06 per cent; yardmasters, switchtenders and

hostlers, 0.24 per cent; transportation, other than train, engine and yard, 0.1 per cent. Maintenance of equipment forces fell off 1.34 per cent.

October employment was 0.63 per cent above the same month last year; and the index number, based on the 1923-1925 average as 100 (and adjusted for seasonal variation), stood at 60.8, the lowest since November, 1936, when it was 60.7.

## Resources Committee Considers Transport Study

"Other future possible studies" under consideration by the National Resources Committee include one on transportation, according to the committee's Progress Report, 1937, which was made public on November 10. The present report is a brief resume of the committee's work, which has included discussions of transportation in reports on "Technological Trends and National Policy" and urban problems, as noted in previous issues of *Railway Age*.

## October Movement of N. Y. Inland Station Sets Record

All monthly records for total i.c.l. freight tonnage handled through the union inland off-rail freight station located in the Port Authority Commerce building, New York City, were broken in October, when a peak of 16,300,000 lb. passed through. This exceeded the previous record, which was established in September, by 800,000 lb. The highest single day for the month was on October 27, with a total of 720,000 lb. The top for a single day since the station was opened was reached on September 30 of this year, with 840,000 lb.

## Washington, D. C., Commercial Zone

The Interstate Commerce Commission, Division 5, has issued an order defining the commercial zone of Washington, D. C., wherein local motor vehicle operations will be exempt from the Motor Carrier Act's regulatory provisions except those relating qualifications and maximum hours of service of employees and safety of operations or standards of equipment. The zone includes the District of Columbia, a section of Montgomery County, Md., which is defined in detail, and the following additional Maryland communities: Garrett Park, Kensington, Chillum, Riverdale, Hyattsville, Bladensburg, Seat Pleasant and Spaulding Districts. Also, Arlington County, Va., and Alexandria.

## Coal Commission to Contest Entire Freight Rate Structure

The National Bituminous Coal Commission has determined to contest "the entire freight rate structure and the burden it imposes upon bituminous coal," according to a resolution adopted on November 10.

Noting the Ex Parte 115 increases and the new railroad proposals, the resolution says that "for many years the freight rate structure and freight rates on bituminous coal have been unsound and uneconomic and have harassed and seriously affected the production and marketing of bituminous coal and the bituminous coal industry



cannot produce, pay wages, and market its coal with the continual rising cost of distribution and increasingly higher freight rate costs."

### Coal Rate Complaint

The Interstate Commerce Commission has assigned for hearing on January 5, 1938, a complaint of coal producers alleging that unjust and unreasonable rates now apply on bituminous coal moving over the Chesapeake & Ohio and other roads from mines in Southern West Virginia, Virginia and Eastern Kentucky to Virginia seaboard points for reshipment by water to New England. The proceeding, instituted by a property owners' committee of coal producers, has been joined by New England interests.

Meanwhile the Kentucky Railroad Commission has filed with the I. C. C. a petition for an investigation of present rates and differentials on bituminous coal from mines in Western Kentucky to Chicago and Western and Northern points.

### General Motors Traffic Association Formed

The General Motors Traffic Association has been formed for the purpose of establishing more uniform policies and practices with respect to the movement of freight and the more ready exchange of helpful information between divisions of the General Motors Corporation. Traffic managers of the various General Motors divisions through the United States will be members of the association. C. R. Scharff, traffic director of the Chevrolet division, has been appointed chairman, and Leo Shaw, formerly traffic manager of the Linden division, has been appointed secretary, with headquarters in Detroit. The first meeting of the association was held in the General Motors Building, Detroit, on November 11 and 12.

### Life Too Short for Pending Reorganizations

Doubt that pending railroad reorganizations can be completed during the lifetime of the men now handling the reorganization cases, was expressed by Federal Judge Charles B. Davis at St. Louis, on November 3, when he granted trustees of the St. Louis Southwestern authority to put into effect wage increases for employees of the carrier belonging to the five operating unions. Operating expenses are mounting so fast, he said, that plans predicated on conditions existing a while back are "being knocked into a cocked hat." "I was looking up expectancy statistics recently," he said, "and I find that the life expectancy of some of us is 14 to 16 years. I doubt whether railroads in bankruptcy or receivership can be reorganized in that time in view of the mounting expenditures of operation."

### National Association of Advisory Boards

A constitution and by-laws for the National Association of Advisory Boards was decided upon at a meeting of delegates of the 13 regional advisory boards at Chicago on November 3 and will be submitted to

### Public Unfairness to Railroads

Judge Knox held that operation of the branch road was unprofitable and would deplete assets that belonged to the line's bondholders. Waving aside pleas of counsel that the railroad "owes a debt of service to the people who invested heavily along its route," the court said:

"The crux of this situation is that a tax reduction is needed. The people never realize how unfair they can be to railroads. In the last several years thousands of miles of railroads have been forced to abandon operations. The people permit huge trucks to run along the routes served by railroads, offering keen competition, and do nothing about it. They have been unfair to railroads right along and have never realized the need for their support.

"I hate to see a road abandoned if it can serve its purpose. However, we must face the facts. I don't see any reason for keeping this spur open for another thirty days. The representatives of communities here who are asking me to delay action are not authorized, nor will they have authority thirty days from now, to reduce the tax burdens carried by this railroad."

—N. Y. Times Report of Federal Judge Knox's Comments on Abandonment of Service by N. Y. W. & B.

the regional boards for ratification. In addition, the meeting adopted a resolution instructing its president and four additional representatives to be appointed by him, to appear at hearings before the House committee in opposition to the train length limitation bill. A considerable portion of the program was devoted to discussions of ways for expanding the activities of the boards. The principal speakers were R. V. Fletcher, vice-president and general counsel, and M. V. Gormley, executive assistant of the Association of American Railroads.

### Budd Exhibits in Philadelphia

A modernistic exhibit illustrating the history and manufacture of stainless steel and its use in the construction of lightweight, streamlined trains, as built by the Edward G. Budd Manufacturing Company, Philadelphia, Pa., will be set up within the next few days in the waiting room of the Reading terminal, Philadelphia, which will be the western terminus of a Budd-built train soon to be placed in operation between Philadelphia and New York by the Reading. The exhibit, which first was shown by the Railway Supply Manufacturers' Association during the railroad convention in Atlantic City, N. J., in June, is designed to show the strength of high-tensile stainless steel and the adaptability of the metal when welded by the Shotweld process.

In the foreground of the exhibit will be a huge sheet of plate glass suspended on a cantilever structure which displays the strength of construction used in train

building. Another feature is a triangular tank, containing 1,150 lb. of salt water, suspended from a single strip of metal attached to a beam by one small welded dot or area.

### "Curly Top Day"

November 13 has been designated as "Curly Top Day" in Elkhart, Ind., the event having been arranged jointly by the Elkhart Chamber of Commerce and the Merchants Council. "Curly Top" is nine-year-old Violet Kathleen Schmidt, who was brought to public attention last Christmas when the crew of the Twentieth Century Limited of the New York Central, in acknowledgment of her daily waving to the train, presented her with much-needed clothing; she was subsequently the guest of F. E. Williamson, president, on two trips to Chicago and one to New York. A public ceremony will be held in the center of the business district at Elkhart. Music will be provided by the high school band of over 200 pieces. Curly Top's picture will be displayed in store windows and the streets otherwise decorated.

The author of a new book for children in which Curly Top's adventures in Chicago and New York are told will be the principal speaker and will present her with the first copy of the book. On November 20, Violet will be the guest of Marshall Field & Co., Chicago, at a luncheon and during the afternoon she will autograph copies of the book.

### The Canadian Roads in September

The Canadian National had net operating revenue in September totaling \$2,342,485 compared with \$2,962,637 in the same month a year ago. Operating net for the nine months was \$10,527,862 compared with \$6,205,461 last year.

September operating revenues were \$17,930,439, as compared with \$17,956,964 in September, 1936. Operating expenses were \$15,587,954, against \$14,994,327 during the similar period of last year.

For the nine months, operating revenues were \$146,075,299, against \$134,448,312 last year, resulting in an increase of \$11,626,987. Operating expenses up to September were \$135,547,437, compared with \$128,242,851 for the similar period of 1936.

The Canadian Pacific's September net operating revenues were \$3,141,712 as against \$3,422,884 in the same month last year, while net for the nine months was \$13,073,941 as against \$11,827,468 in the corresponding period a year ago, being an increase of \$1,246,472.

September's gross totaled \$14,355,271, a slight increase over the \$14,312,164 for September, 1936, while operating expenses increased from \$10,889,280 to \$11,213,558 with the result that net revenues for the month showed a decrease of \$281,171.

For the nine months gross at \$105,101,990 increased by \$5,158,410 over a year ago, but expenses also increased by \$3,911,938 to \$92,028,049.

### Westchester Commuters Seek State Operation

In an effort to effect a continuance of the New York, Westchester & Boston,

which by order of Federal Judge Knox must end all operation by January 1 unless costs are reduced materially before that date (as reported in the *Railway Age* of October 23, page 587), the Citizens Committee for continuance of the road drew up on November 4 a proposal that a transit authority be created by the New York State legislature to acquire and operate the system. The formal statement of the proposal has been drawn up by authorization of William E. Schramek, chairman of the committee, and will be presented to Governor Lehman some time next week. Herein it is expressed that since the discontinuance of service on the road will cause "incalculable damage to communities throughout the southern and central sections of Westchester County, vitally affecting every phase of economic life" and since all proposed plans for continued operation of the road have been exhausted, it is requested that the legislature create a transit authority to continue operation of the road. Members of the committee are of the opinion that such a transit authority would be constituted very much in the manner of the Port Authority created by the legislatures of the states of New Jersey and New York.

### New Jersey Tax Case Appealed

Seven New Jersey railroads, continuing to seek relief from alleged excessive taxes levied by the State of New Jersey for the years 1932 and 1933, appealed to a three-judge federal circuit court of appeals sitting at Philadelphia, Pa., on November 5, from an adverse decision rendered recently by the Federal District Court at Trenton, N. J. Thomas R. White of Philadelphia, attorney for the carriers, argued that state assessments on the railroad property involved were excessively high in comparison with those on non-railroad property, while D. E. Minard, special attorney general for the State of New Jersey, declared that the railroads failed to present adequate proof of their real estate values. The judges, Joseph Buffington, J. W. Thomp-

son and John Biggs, Jr., reserved decision.

Meanwhile hearings concerning the taxes levied by New Jersey for 1934, 1935 and 1936 are continuing before Federal Judge Philip Forman at Trenton, N. J. The entire litigation, both in Philadelphia and in Trenton, involves total assessments amounting to about \$37,000,000; thus far, 6,500 pages of testimony have been rendered and 500 exhibits have been presented.

The carriers seeking relief are the Central of New Jersey, the Delaware, Lackawanna & Western, the Lehigh Valley, the New York Central, the New York, Susquehanna & Western, the New Jersey & New York and the Erie.

### Investigation of Truck Rates in Middle Atlantic States

The Interstate Commerce Commission's hearings in connection with its investigation of motor truck rates in the Middle Atlantic states got under way before Division 5 at Washington, D. C., on November 10. At the opening session Commissioner Eastman stated that the proceeding had been launched to determine whether or not the commission should take steps to prevent a destructive rate war among motor carriers. He added that Division 5 approached its task with an open mind.

The first witness was D. T. Waring, tariff publishing agent for the Middle Atlantic States Motor Carrier Conference which has about 600 members. Mr. Waring pointed out that when initial motor rates were filed with the commission there was considerable variation between the conference rates and those of the non-members; and that class rates of the conference were about at the level of rail rates. These were subsequently lowered from time to time to meet rates published by independents, until finally all agreed, in the interests of stabilization, on the level filed to become effective last March. Since then work of organizing additional conferences has been under way.

Into the present case (Ex Parte MC 14)

which is an investigation on the commission's own motion, there has been consolidated I. & S. M-205, Rates Over Freight Forwarders, Inc., in which a suspension order was recently issued.

### Would Grant Permit for Cartage Service at St. Louis

Joint Board No. 135, composed of George W. Anderson of Illinois and John C. Highberger of Missouri, has recommended in a proposed report that the Interstate Commerce Commission find operations of the Interstate Express & Transfer Company in the performance of collection and delivery service and general drayage service between points in St. Louis and St. Louis County, Mo., and East St. Louis, Ill., to be those of a common carrier, and that a certificate of public convenience and necessity therefore be granted under the Motor Carrier Act's "grandfather" clause. Also the board would grant the applicant a permit to operate as a contract carrier of furnaces and furnace parts over specified routes between St. Louis and certain points in Illinois.

The Interstate, the report says, performs local drayage of commodities generally, except livestock, between railroad and motor carrier freight terminals and shippers and consignees within St. Louis, East St. Louis and St. Louis County. Collection and delivery service is performed for nine railroads and freight is transported for several shippers in the territory under written and oral agreements. The joint board rejected the contention of protestants that the operations under review, being within a municipal zone, were exempt from the Motor Carrier Act's regulatory provisions except those relating to qualifications and maximum hours of service of employees and safety of operations or standards of equipment. It cited the I. C. C. decision in the Scott Bros. case to support its assertion that "Collection and delivery service involves transportation performed under a common arrangement

### "On the Spot" Public Relations

"On Thanksgiving Day, of last year, I was starting for Thomaston on No. 1. On account of the crowd they were obliged to put on an extra car, which happened to be a smoker with leather seats. I was seated half near the rear and a prosperous looking lady in a Hudson seal coat followed by a gentleman came into the car and the lady decided on the seat in front of me. Her husband began reading his paper, and she started: 'The railroads want us to ride in their trains and look what they ask us to ride in.' She turned to me and said, 'Don't you think it's a disgrace asking us to ride in a thing like this?'"

"Here was opportunity. I said, 'Taking everything into consideration, it isn't so bad. May I explain?' And she said if I could think of an explanation she'd like to hear it.

"Well," I said, 'the company is a

little short of first class cars because of the increase in business; they gave us the best car available. I'll admit we have leather seats, but the car is clean and it smells clean. The seats are not really uncomfortable. As I look out the window I feel sorry for any person who drives a car on a day like this, a couple of degrees colder and the highways would be like ice. My car is in the garage and I'm glad it is. It won't have to be pulled out of the ditch and I won't take a trip to the hospital. There is no danger of meeting a drunken driver. There are two qualified engineers on the engine who have years of experience. They have a good position and value it. So you are assured of a safe trip.'

"They both asked questions and I explained to them the engine inspections, repairs and the efficiency of the inspec-

tors and repair men. I explained the car inspectors and their duties. I told them of the block signals and flag protection, the dispatchers and how trains were operated, our examinations and how accidents had been reduced to a minimum.

"The train had reached Brunswick and I got ready to leave. They both shook hands and the lady said, 'I'm ashamed of myself.' The husband followed me to the door and said, 'You are a diplomat, I was in for a very unpleasant ride. Please accept my thanks; the car can stay in the garage. I hate to drive any time.'

"Now, these opportunities are visible every day not only on a train but in homes, on the street, everywhere. We have transportation to sell and every man should be a salesman, or at least a booster."

—H. A. Morse, Engineer, Maine Central, in a letter to the "Boston & Maine Railroad Employees' Magazine."



for a continuous carriage or shipment to or from a point without the municipal area and is not exempt."

### Canadian Board Allows Change in Through Rates

The Board of Railway Commissioners for Canada published this week at Ottawa, Ont., an order that through rates and charges between the United States and Canada may be increased to the extent that they will conform with increases authorized recently to United States carriers by the Interstate Commerce Commission.

The Board said United States and Canadian carriers had made application to increase international freight rates and charges between points in Canada and points in the United States, also import and export rates between Canadian and United States ports and stations in Canada and the United States to the same extent as set by the I.C.C.

In connection with the applications, the board ordered specifically:

"(1) That the proportions of through rates and charges between the United States and Canada, in both directions, in effect on the date of this order, accruing within Canada, may be increased to the extent that the through rates and charges shall conform to the increases authorized by the order of the Interstate Commerce Commission. (2) That the rates contained in freight tariffs applicable on import and export traffic moving through Canadian and United States ports to and from stations in Canada and the United States, when such import and export rates are constructed in relationship to those applicable within the United States, may likewise be increased to the extent authorized by the said order of the Interstate Commerce Commission. (3) That the rates and charges increased under the provisions of sections 1 and 2 hereof, as well as the rates applying on traffic carried between points in the United States through Canada, may be published and filed to become effective five days after the filing thereof with the board."

### Motor Company Loses Routes Because of Rail Affiliations

While reluctant to reach such a conclusion the Interstate Commerce Commission found itself "constrained by the statutory provisions which are applicable" to deny the petition of the E. T. & W. N. C. Motor Transportation Company to lease certain physical property and operating rights from Imperial Transportation Company, Inc., and Hoover Lines, Inc., and to purchase similar property from the Chattanooga-Atlanta Motor Freight Line, Inc. The decision turned upon the tie-up between the applicant and the East Tennessee & Western North Carolina and Linville River railroads; and the commission's finding that the Transportation Company is

affiliated with these necessitated, for favorable action on the application, a further finding that the railroads would be able to use the operating rights proposed to be acquired "to public advantage in their operations."

On the latter score, the report says, the Transportation Company "frankly states that such use is impossible 'on account of the difference in operated mileage and scarcity of commodities handled, and the geographical position of the railroad and the Transportation Company.'" The discussion closes with a citation from United States v. Mo. Pac. R. Co., 278 U. S., 269, 277-78, reading as follows: "Inconvenience or hardships, if any, that result from following the statute as written must be relieved by legislation."

The applicant motor carrier is a subsidiary of the Cranberry Iron & Coal Company which also owns the two railroads found to be its affiliates. Involved in the routes sought is the Chattanooga, Tenn.-Atlanta, Ga., line of the Chattanooga-Atlanta Motor Freight Line, Inc., which, the report says, has been operated by the applicant since November 1, 1935, "without commission approval, and in consequent violation of section 213." The decision stipulates that steps should promptly be taken to end this situation and "applicant should advise us within 20 days from the date hereof that the violation has ceased."

### Motor Publication Cites Truck Gains Over Rail Traffic

Twenty-one "leading" cities receive 94.5 per cent or more of their milk volume by motor truck, according to a table appearing in the 1937 edition of "Motor Truck Facts," a publication of the Automobile Manufacturers' Association, Inc., New York. Based upon data released by the United States Department of Agriculture, the table shows that, of the larger cities, Cincinnati, Ohio, Detroit, Mich., Los Angeles, Cal., Louisville, Ky., Milwaukee, Wis., Oakland, Cal., Omaha, Neb., St. Louis, Mo., and St. Paul-Minneapolis, Minn., receive 100 per cent of their supply over the highway, while Pittsburgh, Pa., and San Francisco, Cal., milk shipments are 96 per cent truck and Baltimore, 94.5 per cent. With reference to large eastern cities, the booklet points out that, in 1936, 45.8 per cent of the milk receipts at New York were shipped by truck, 100 per cent of those shipments originating in Massa-

chusetts and 95.2 per cent of those originating in New Jersey being highway-hauled. Further figures are given purporting to show that 72.3 per cent of Philadelphia's milk came by highway vehicle in 1936 and 19.6 per cent of Boston's supply.

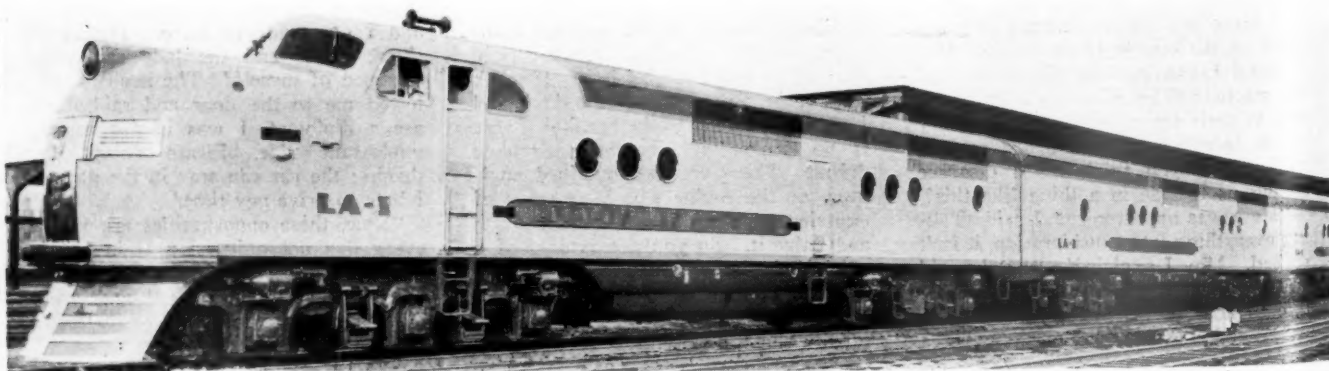
In the haulage of fruits and vegetables shipped from points in New York, Pennsylvania, New Jersey and Massachusetts, truckmen now possess 56 per cent of the field, measured in tonnage, and from points in Delaware, Maryland, Virginia and North Carolina, 23 per cent, all of which estimates are based upon reports from 134 country shippers published in a study prepared for the Farm Credit Administration.

Relative to the division of livestock shipments between the highway and railway carriers, the pamphlet carries a line graph based upon statistics appearing in farm dailies of the United States corn belt purporting to show that livestock "receipts" by railroad had dropped in the middle of 1936 to about 45 per cent of the total, while shipments by truck at the same period had risen to 56 per cent of the total.

In 1935, motor trucks hauled 21,960,252 tons, or 5.9 per cent, of the total volume of bituminous coal produced in "active mines of commercial size," the study points out. Those states wherein trucks hauled the largest proportion of commercial bituminous coal are stated to be South Dakota (84.9 per cent), Arizona, California, Idaho and Oregon (all 33.8 per cent), Washington (22.5 per cent) and North Dakota (22.4 per cent). The figures are based upon a study by the Bureau of Mines, United States Department of the Interior.

### Electro-Motive Delivers 5,400-Hp. Diesel Locomotive to U. P.

The world's largest and most powerful Diesel-driven passenger locomotive has been delivered to the Union Pacific by the Electro-Motive Corporation and is now being given break-in tests before going into regular service the latter part of December on the new Union Pacific-Chicago & North Western streamliner, City of Los Angeles. This new streamliner, including a three-unit locomotive, an auxiliary power car and 13 revenue cars, will operate on a 39¼-hr. schedule between Chicago and Los Angeles, Cal., and be the largest streamline train in the world.



5,400-Hp. Diesel Locomotive Recently Delivered to the Union Pacific by the Electro-Motive Corporation



Capable of developing speeds in excess of 110 miles an hour, the new Diesel locomotive is composed of three locomotive units, each of which houses two 900-hp. Diesel engines, the six engines having a total rated capacity of 5,400 hp. The individual engines are each of the V-type, high-compression, two-cycle oil engines, with 12 cylinders of 8-in. bore and 10-in. stroke. Each of these engines is direct connected to a generator which provides electric current for two traction motors, mounted on each of the six-wheel trucks. Control of the entire power plant centers in the cab at the head end. The total length of this three-unit Diesel locomotive is 209 ft. 6 in.

The twin of the new City of Los Angeles Diesel locomotive, which will be used for the new streamliner, City of San Francisco, now being built, will also be delivered by the same builder in the near future to the Union Pacific. Both locomotives will be tested and adjusted in regular service until car equipment for the new trains is completed and delivered.

### Motor Truckers Consider Rate Rise at N. Y. Meeting

Discussion of the railroad petition for a 15 per cent horizontal increase in freight rates and appointment of a committee to meet some time during the week of November 14 with representatives of western and mid-western motor truck interests constituted the program of a meeting of eastern trucking interests held in the quarters of the Traffic Club of New York, in New York City, on November 8. The meeting proved to be a disappointing sequel to a meeting of the Middle Atlantic States Motor Carrier Conference in New York on November 4, when it was indicated that the members of the conference, who represent over 600 highway freight carriers in the area roughly defined as west of the Hudson river, north of the Potomac and east of the Ohio and West Virginia lines, might possibly seek a 15 per cent horizontal increase in interstate and intrastate trucking rates to follow upon the heels of the railroad rate rise. At that meeting it was planned that the November 8 meeting should be attended on a national scale by representatives of the 12 main regional motor truck groups.

Instead, the latter was attended only by representatives of the operators along the eastern seaboard—specifically, the Middle Atlantic States Motor Carrier Conference, the Southern Motor Carrier Rate Conference, the Eastern Central Motor Carriers' Association, and the Eastern Motor Freight Bureau, together with representatives of minority groups. Furthermore, the expected concerted sentiment as to the considered rate rise failed to materialize and no conclusions were reached on any specific proposal, other than the appointment of a committee to meet with western and mid-western representatives next week.

The conference, in explaining the factors leading to consideration of rates, made reference to that part of the Interstate Commerce Commission's recent report in Ex Parte No. 115 proceedings in which the commission stated: "The fact is well known to us, and is to some extent devel-

oped in this record, that conditions similar to those which have adversely affected the railroads have operated to like, or possibly greater, financial disadvantage of the motor carriers and water carriers. It is not at all unlikely that they would be glad to join with the railroads in an increase in the level of competitive rates which would leave the relative position of all unchanged and at the same time improve the financial condition of all."

The opinion is held in transportation circles that the question of a horizontal highway freight rate rise may very possibly be introduced on a national scale at the fourth annual convention of the American Trucking Associations, Inc., to be held on November 15 to 18, inclusive, at Louisville, Ky., although no confirmation of such has been made public.

### I. C. Would Drop Automatic Train Stop System

The Illinois Central has applied to the Interstate Commerce Commission for authority to substitute "the protection of modern three-indication color light automatic block signals of the searchlight type on the wayside" for the automatic train-stop and two-indication cab signal devices now in operation on its 122-mile line between Champaign, Ill., and Branch Junction. The application, which takes the form of a petition for a modification of the commission's order of June 13, 1922, sets forth, among other contentions, that traffic conditions in the territory involved have changed substantially since the present system was installed; and desired maximum train speeds can be achieved only after an expenditure of \$68,411 for rearranging the present roadside apparatus to provide the full braking distances required.

Rather than make this expenditure the road would prefer to spend \$123,045 on the proposed new automatic block system, because the latter would bring only \$18,967 a year in operating costs as compared with the \$44,421 spent annually to operate the present system. Thus, the petition points out, the extra \$54,633 investment will result in an annual saving of \$25,454.

The system which the road desires to discontinue was completed in January, 1926, at a total installation cost of \$394,307. It is the Union Switch & Signal Company continuous induction type automatic train stop with forestalling feature and two indication cab signals without permissive wayside signals; 94 locomotives are at present equipped. Present conditions, and those to be expected in the future, the petition says, are such that they "will not hereafter reasonably require the continued maintenance and operation of the present expensive system to afford adequate protection and safety." The density of traffic and number of trains moved have both diminished, chiefly because of the "development of improved highways in the territory and the increased use of trucks, buses and private automobiles."

As to train speeds it is pointed out that at the time of the installation in 1926 the maximum operating speed in the territory involved was 60 m.p.h. This has been gradually raised and it is now desired to

put in an 85 m.p.h. maximum for passenger trains and a 60 m.p.h. limit for freight trains. These plans, if carried out with the present system in operation, would require the \$68,411 rearrangement expenditure mentioned above.

On the other hand, the petition insists, the proposed signal installation will provide adequate protection, adding that signals of the same type are now in service on the Illinois Central on 1,533.7 miles of road and 2,293 miles of track. Citing statistics of accidents in the automatic train stop territory the petition regards it as "noteworthy" that these have occurred in spite of the system. Also, there are "no known instances" wherein the system has prevented collisions or accidents on this line which would have occurred in its absence. Meanwhile the system "has caused numerous undesired brake applications resulting in stopping and delaying trains and damage to equipment and lading." Elimination of the latter and the discontinuance of the locomotive devices are cited as economies, in addition to the above-mentioned saving in operating costs, which may be expected to result from the proposed substitution.

### Freight Car Loading

Loading of revenue freight for the week ended October 30 totaled 771,655 cars, a decrease of 1,698 cars or 0.2 per cent below the preceding week, a decrease of 42,859 cars or 5.3 per cent below the corresponding week in 1936 and a decrease of 163,060 cars or 17.4 per cent below the same week in 1930. All commodity classifications except forest products and grain showed decreases under the preceding week, while all commodity classifications except grain showed decreases under the preceding week. The summary, as compiled by the Car Service Division, Association of American Railroads, follows:

Revenue Freight Car Loading			
For Week Ended Saturday, October 30			
Districts	1937	1936	1935
Eastern .....	156,049	165,878	142,863
Allegheny .....	138,695	159,004	127,551
Poconchos .....	54,160	59,957	50,724
Southern .....	112,459	114,378	96,535
Northwestern ..	106,649	120,409	93,864
Central Western ..	136,041	130,023	112,518
Southwestern ...	67,602	64,865	57,943
<b>Total Western Districts .....</b>	<b>310,292</b>	<b>315,297</b>	<b>264,325</b>
<b>Total All Roads.</b>	<b>771,655</b>	<b>814,514</b>	<b>681,998</b>
Commodities			
Grain and Grain Products .....	44,562	33,612	33,345
Live Stock .....	19,402	21,966	19,565
Coal .....	150,725	164,598	125,398
Coke .....	7,951	11,033	7,018
Forest Products..	34,477	36,379	29,194
Ore .....	30,831	40,567	23,244
Merchandise			
L.C.L. ....	169,871	170,927	165,375
Miscellaneous ...	313,836	335,432	278,859
October 30 .....	771,655	814,514	681,998
October 23 .....	773,353	816,242	710,621
October 16 .....	809,944	826,525	732,304
October 9 .....	815,122	820,570	734,154
October 2 .....	847,245	819,597	705,974

Cumulative Total,  
44 Weeks ... 33,056,164 30,270,991 26,677,135

**In Canada.**—Car loadings for the week ended October 30th dropped to 59,689 cars from 61,349 cars for the previous week and 59,955 cars for the corresponding week last year, according to the statement of the Dominion Bureau of Statistics. For the

first time this year the index number was below last year's, dropping from 78.65 for the previous week and 74.93 last year to 74.60. Compared with 1936 loadings miscellaneous and ore were the only groups to show any substantial increases; these were up 3,972 cars and 603 cars respectively.

	Total Cars Loaded	Total Cars Rec'd from Connections
Total for Canada:		
October 30, 1937.....	59,689	27,104
October 23, 1937.....	61,349	27,510
October 16, 1937.....	56,781	25,987
October 24, 1936.....	59,955	26,219

#### Cumulative Totals for Canada:

October 30, 1937.....	2,188,594	1,142,780
October 24, 1936.....	2,024,656	992,770
October 26, 1935.....	1,942,768	913,331

### 1937 A.S.M.E. Annual Meeting

During the first week in December—December 6 to 10, inclusive—The American Society of Mechanical Engineers will hold its fifty-eighth annual meeting at the Engineering Societies building, 29 West Thirty-ninth street, New York. The program includes a wide variety of technical subjects and social events, and consideration of Society affairs is provided for in the meetings of the Council on Monday and Friday, December 6 and 10, the Local Sections Conference at 9 a.m. Monday, December 6, and the business meeting at 4 p.m. on December 6. Among the sessions of most interest to railroad men will be the following:

Monday, December 6

8 p. m.

MACHINE-SHOP PRACTICE  
Maintenance of Cemented Carbide-Tipped Drills, by Malcolm Judkins

Tuesday, December 7

9:30 a. m.

MECHANICAL SPRINGS  
Heavy Helical Springs, by C. T. Edgerton  
Wire Springs, by F. P. Zimmerli  
Spring Materials, by D. J. McAdam, Jr.

2 p. m.

HIGH-TEMPERATURE JOINTS  
Welded Joints, by F. L. Everett and Arthur McCutchan  
High-Temperature Joints, by Joseph Marin  
Bolted Joints for High-Pressure Vessels, by E. O. Waters  
Practical Aspects of Turbine Joints, by C. B. Campbell  
Effect of Temperature Variation on the Creep Strength of Steels, by E. L. Robinson

8 p. m.

Honors Night

Wednesday, December 8

9:30 a. m.

MANAGEMENT  
Scientific Management in the Unionized Plant, by Harold D. Bergen and George W. Taylor

STRENGTH OF MATERIALS

Fatigue Failure from Stress Cycles of Varying Amplitude, by B. F. Langer  
Simultaneous Effects of Corrosion and Abrupt Changes in Section on the Fatigue Strength of Steel, by T. J. Dolan  
Fatigue Life of Tapered Roller Bearings, by W. O. Clinedinst

2 p. m.

MANAGEMENT  
Scientific Management in the Unionized Plant—A Case History

VIBRATION

An Improved Method for Calculating Free Vibrations in Systems of Several Degrees of Freedom, by W. M. Dudley  
Steady Oscillations of Systems with Non-Linear and Unsymmetrical Elasticity, by M. Rauscher  
Vibration Stress Measurements in Strong Centrifugal Fields, by C. M. Kearns and R. M. Guerke  
Modern Aids to Vibration Study, by E. H. Hull  
Heat Dissipation through an Annular Disk or Fin of Uniform Thickness, by W. M. Murray

GENERAL THEORY

(Water-Hammer Symposium)  
Hydraulic Phenomena in Fuel-Injection Systems for Diesel Engines, by Kalman DeJuhasz

6:30 p. m.  
Annual dinner, Hotel Astor

Thursday, December 9

9:30 a. m.

SAFETY

The Application of Safety in Mechanical Production, by Everett W. Martin  
The Relation of an Adequate Job-Training Program to Accident Prevention, by Glenn L. Gardiner

2 p. m.

APPRENTICESHIP TRAINING  
Apprentice Training, by Wm. F. Patterson

FUELS

Panel Discussion on Chemically Treated and Dedusted Coal; Deslagging of Boiler Surfaces

LUBRICATION

A Method of Observation and Measurement of Surface Finish, by S. Way  
Running-In Characteristics of Some White-Metal Journal Bearings, by S. A. and T. R. McKee  
Static Friction, by W. E. Campbell

MACHINE-SHOP PRACTICE

Safety in Machine Design, by A. W. Luce  
Radiographic Inspection, by H. R. Isenburger

8 p. m.

OIL AND GAS POWER

Some Data on Diesel-Electric Switching Locomotives, by J. W. Anderson  
The Effects of Changes of Speed and Load on the Mechanical Friction Losses of Reciprocating Engines, with Special Reference to the Four-Cycle Trunk-Piston Type, by F. H. Dutcher

RAILROAD

Stresses in Railway Axles and Locomotive Crankpins, by R. Eksergian  
Air Conditioning of Railroad Passenger Cars, by L. W. Wallace and G. G. Early, Jr.  
Report of Progress in Railway Mechanical Engineering by Survey Committee RR6, by A. Giesl-Gieslingen

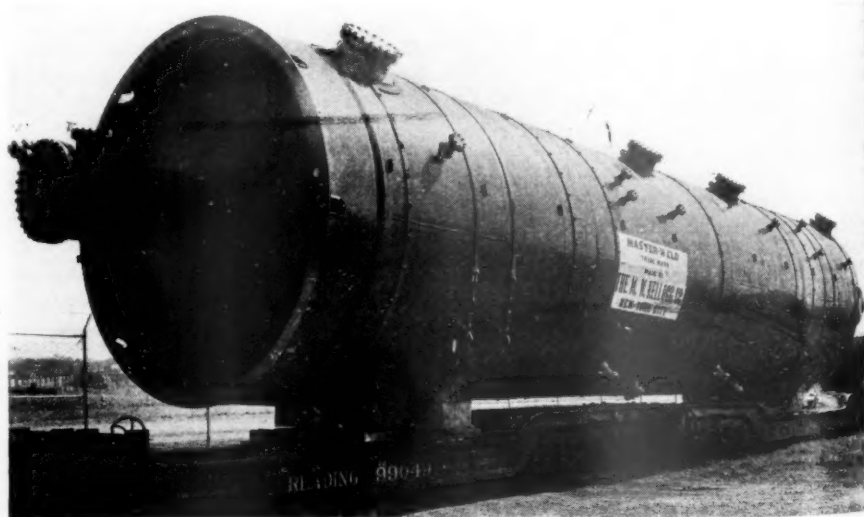
### Raising Competitive Rates in Southwest

The move of rail and motor carriers operating in the Southwest to increase their revenues by raising the level of competitive rates has been sanctioned by the Interstate Commerce Commission in a decision authorizing the cancellation of all-freight and all-commodity rates and the substitution therefor of a system of class rates between points in California, Arizona, New Mexico and El Paso, Tex. The report in I. & S. No. M-117, which also embraces I. & S. No. 4350, follows shortly after the Ex Parte 115 decision wherein the commission suggested that "it is by no

means clear" that "competitive rates are not capable of being increased, with advantage to the railroads."

The report in the present case was prepared by Commissioner Splawn while brief concurring opinions were written by Commissioners Eastman, Mahaffie and Caskie; Commissioner Lee dissented in part. While favoring the general plan of the carriers, as noted above, the majority report disapproved certain features, and thus ordered the suspended schedules cancelled without prejudice to the filing of others in conformity with the findings. The latter included one holding that proposed volume class rates from and to El Paso would be unduly prejudicial; and another holding that specific commodity rates for motor transportation from Los Angeles, Calif., to Albuquerque, N. M., and the failure to maintain similar rates from Los Angeles to El Paso, would be unduly prejudicial and preferential.

The report describes the proposal "in its broadest aspects" as "a plan on the part of the motor carriers to abandon their flat rates used effectively by them in developing a substantial volume of traffic in this territory in competition with the rail carriers, and to substitute therefor a classification basis of rates, governed by the truck classification. Its apparent effect would be to increase rates on many articles rated third class and higher now moving on the flat rates. The plan of the rail carriers is to likewise discontinue the use of all-commodity rates on carload lots, and with respect to merchandise traffic, numerous exceptions to their classification on the higher-rated articles, which resulted in their less-than-carload all-commodity rates. They explain that both of these forms of rates were established in an attempt to compete with the flat rates of the truck lines. They propose, by way of experiment, to substitute therefor class rates governed by the western classification on substantially the same level as the proposed rates of the motor carriers. This would effect increases similar to but generally not so great as those in the truck



Floated from Jersey City to Whiting, Ind.

A 460,000-lb. Evaporator Tower en Route on Special Cars to Jersey City, N. J., Pier, Where It Was Immersed and Floated to Whiting, Ind., Via the Hudson River, N. Y. State Barge Canal, and Lakes Ontario, Erie, Huron and Michigan



rates and, with few exceptions, the resulting rates would be on a level lower than the maximum prescribed in the class rate revision."

The report continues to discuss events leading up to the framing of the proposal under review, including conferences between representatives of the rail and motor carriers concerned. Consideration in turn of the proposed truck and rail rates and the justification for them is followed by a review of protestants' evidence. Then comes the report's conclusions, including an observation to the effect that the Motor Carrier Act does not place upon a motor carrier "the burden of proof to show that increased truck rates are just and reasonable." Disagreement with the latter was the basis of the separate expressions from Commissioners Eastman and Caskie and of part of Commissioner Lee's partial dissent. Mr. Lee was also unable to approve the findings of undue prejudice and preference, nor did Commissioner Mahaffie think that the record furnished "adequate support" for the findings in that connection.

## New Haven Hearings Are Resumed

(Continued from page 693)

plan committee. Mr. Stockton explained the Old Colony's plan under which its properties would be kept within the New Haven system. There is, however, a threat of severance in this plan's discussion of "possible alternatives"; although "it seemed to no one's benefit to propose disruption of a long established system if Old Colony can receive reasonably fair treatment from the New Haven as outlined in this plan."

William J. Backes, former chief engineer of the Boston & Maine and now a consulting engineer, presented results of a study which he made on behalf of the Old Colony. Mr. Backes was cross-examined at considerable length by New Haven counsel on various aspects of his study.

Other suggestions for treatment of the Old Colony came from the protective committee of that road's shareholders; they comprised an outline of a plan for independent operation with an alternative proposal for modifications of the plan filed by the Old Colony Railroad Company. This group employed as its expert Joseph L. White, former co-director of the federal co-ordinator's section of transportation service. It lists three possibilities as open to the Old Colony—sale of its assets to the New Haven or some other road, releasing its properties to the New Haven or leasing them to some other road, and independent operation. Only the first and third of these "seem practical" to the committee under existing circumstances. If independent operation were decided upon the committee suggests that with the addition of car ferries operating between Newport, R. I., and the port of New York, the Old Colony "has a potential earning power more than sufficient to service all of its outstanding obligations and to provide interest on all of the additional capital needed for equipment and working capital." This set-up the committee will favor unless

the New Haven plan is readjusted in such a way as to give Old Colony shareholders New Haven securities "in an amount which this committee feels is fair."

The Mutual Savings Bank Group committee, representing 229 mutual savings banks holding \$39,751,300 of securities involved in the proceeding, presented a series of modifications to the debtor's plan. This committee's chairman and first witness—Myron F. Converse, president of the Worcester (Mass.) Five Cents Savings Bank—stated that his group in general believes that the debtor has developed a plan, which "represents a sincere effort to deal equitably" with all interests. The group does think, however, that the proposed capitalization is too high; and it sets up in this connection its own suggestions for a total capitalization of \$350,525,120. Fixed charges would be \$7,928,673 and contingent interest charges \$2,067,295.

Mr. Converse was followed by William J. Cunningham, professor of transportation, Harvard Business School, who is technical adviser to the Savings Bank Group. Professor Cunningham asserted that the capitalization proposed by the debtor is "excessive" because it perpetuates in capital obligations expenditures of the past in property which is not now used or useful or which has become obsolete; also, he said, it cannot be justified on the basis of prospective earnings. The New Haven's forecast of earnings Professor Cunningham called "a carefully prepared document" which "may properly be used to test the soundness of any proposed capital structure."

## Reveal I. C. C. Finance Practices

(Continued from page 694)

record which referred to his attitude regarding the "flaunting" of the commission's order by the T. & P. Commissioner Meyer's memorandum to his fellow commissioners said in part:

"The simple, indisputable fact is this: Division 4 found that acquisition at the price specified (substantially lower than the option price) would be in the public interest. The Division would not have approved the acquisition at the option price. It expressly declined to do so. The applicant did in fact pay the forbidden price, and apparently attempts to justify it through subterfuges. This is a plain violation of our order and of the law on which it was based. If there ever was a case of 'flaunting' in the face of the law, this is it.

"It may be that those of our lawyers who insist that successful prosecution cannot be undertaken will finally be found to be correct by the courts. I do not believe so. If this acquisition is found lawful, the country should know it and we should promptly report to Congress and recommend amendments to the law which will stop such chicanery. We should also cease inserting conditions in these acquisition orders. There are scores of such conditions outstanding. I recommend immediate prosecution."

At the November 4 session of the com-

mittee a dispute arose between the committee and counsel for the Guaranty Trust Company of New York regarding the correctness of certain exhibits which the Guaranty Company had introduced in the hearings of the committee earlier in the year. The counsel for the Guaranty Company charged that the Senate Committee had published false and misleading information in the first volume of its reports which have recently been published. William C. Potter, chairman of the board of the Guaranty Trust Company, read a letter into the record through his attorney, Joseph N. Rosenberg, in which he charged that there are no less than 81 errors in Volume 1 of the record, many of them consisting of misplaced decimals "with the result that the exhibit as printed in Part 1 incorrectly decreases by many times the extent of the commitments or risks assumed by Guaranty Company in these transactions and incorrectly and greatly increases the profits of the Guaranty Company." Mr. Potter asked that the "remaining undistributed copies of this volume be corrected; that those who have received copies of the volume, wherever possible, be notified of the grave errors in the entire exhibit; and that a copy of this letter be included in the records of the proceedings of this committee."

In answer to Mr. Potter's contention, the Senate committee placed on the stand George Ortleb, deputy public printer, who declared that "the figures marked by the Guaranty Trust Company as erroneous represented the exact figures of the exhibit filed with the committee by the Guaranty Trust Company, except in respect to the footings of one column containing four lines of digits, where by reason of the absence of dollar signs, decimal points, or visible guide lines, the public printer was unable to tell where the Guaranty intended, as it now claims, that it wanted to have a decimal point—although it never introduced such a comma at this point or in any of the other figures in the exhibit." The counsel for the committee characterized the attempt by the Guaranty Trust Company to discredit the committee as a "cheap publicity stunt" and Senator Truman of Missouri, acting chairman of the committee, expressed the view that when the Guaranty Trust Company appeared, by counsel before the committee to make its charges, there must have been "some internal necessity" behind that action.

Robert T. Swaine, counsel for Kuhn, Loeb & Co., of New York, appeared as a witness before the committee and expressed the opinion that the repressive control measures were bringing the railroads of the country to the point where the government would have to take over their future financing. He also said that it was impossible to accurately anticipate what Congress and the Interstate Commerce Commission would do. Senator Truman said that "that's what you're heading for if you keep on having receivership after receivership." The session on November 4 was devoted mainly to questioning various members of Kuhn, Loeb & Co., regarding their part in financing the various bond issues that were floated for the Missouri Pacific during the decade from 1920-30.

The committee sessions on November 8,



9 and 10 were given over entirely to a thorough examination of the debtor's proposed plan of reorganization for the Missouri Pacific. On November 8 the witnesses were George Whitney and S. Parker Gilbert, members of the firm of J. P. Morgan & Co., and Lloyd Kitchel of the New York law firm of Cadwalader, Wickersham & Taft, counsel for the so-called Stedman committee which represents the first and refunding mortgage bondholders of the MOP. The committee had called John W. Stedman, chairman of the committee, but he was unable to come on account of illness.

Both Mr. Whitney and Mr. Gilbert were given a rigorous cross-examination as to their parts in the negotiations which led to the final drafting of the Stedman committee revised plan of reorganization and the debtor's revised plan. These plans are virtually the same with the exception that the Stedman plan makes a provision for the unpaid interest on the bonds while the debtor's plan does not. The Stedman committee has told the commission that it will go along with and recommend to its bondholders the adoption of the debtor's plan if the commission and the court approves it. The debtor's plan would leave the bondholders in financial control of the road, but would allow the present management to control the board of directors and operate the road for the present time. It would also allow the present stockholders to receive warrants for stock which could be exercised within a period of 15 years permitting the stockholders to purchase stock at a reduced price if they so desire. It is agreed that at the time of consummation of the plan, the common stock warrants will be virtually worthless and will continue to be so until the earnings of the road reach a level commensurate with that of 1930.

At the November 9 session counsel for the committee opened up in earnest in an attempt to thoroughly discredit the debtor's plan by pointing out certain provision of the plan which they felt would allow the present management to perpetuate the evils which, they claim, the record shows so far. The principal witnesses who represented the Stedman committee were Frederick W. Ecker, vice-president of the Metropolitan Life Insurance Company, Alfred H. Meyers, treasurer of the New York Life Insurance Company, W. Lloyd Kitchel, counsel for the Stedman committee, and Eugene J. Conroy, secretary of the Stedman committee. These witnesses were questioned closely regarding the negotiations of the committee and also regarding their knowledge of the details of the debtor's revised plan, which is now before the commission for final decision.

Max Lowenthal, counsel for the committee, charged that the Van Sweringen interests would continue to dominate the new company, regardless of the provisions of the plan. Mr. Kitchel denied that this would necessarily be true and expressed the belief that the new directors, 12 of which would be chosen by the present management, would be so-called "on line" directors who would have only the interests of the railroad at heart. Time and again, under repeated questioning by Mr. Lowenthal, both Mr. Ecker and Mr.

Meyers had to admit that they were not acquainted with what they called "details" of the plan and were forced to call upon counsel for the answers.

The November 10 session continued the interrogation of these witnesses regarding details of the debtor's plan. Seemingly, the committee is desirous of pointing out the fact that under the new plan, the MOP will continue to be dominated by the interests who were in charge of it when it went into bankruptcy. The committee has so far objected to the provision for a six year term for directors and the provision that no director may originate business in the directors' meeting without a petition signed by himself and two other directors. It is intimated by the committee that the first provision was placed in the plan to allow the present management to have control of the board for a longer period and that the latter provision is nothing more than a "gag" rule to stifle certain directors if they should prove antagonistic to the majority.

The committee intends to search the entire plan, examining William Wyer, secretary-treasurer of the MOP, who is known to have been one of the principal negotiators and drafters of the present modified debtor's plan. It is not known at this time whether the committee will conclude hearings this week or not.

## Supply Trade

**S. A. Richardson** has been appointed district sales representative in the newly established Cleveland office of the **Newport Rolling Mill Company**, the **Andrews Steel Company** and the **Globe Iron Roofing & Corrugating Company**, Newport, Ky.

**T. Wilde**, president of the **American Hair & Felt Company**, Chicago, has resigned. Mr. Wilde is severing his connection with this company for the purpose of establishing a general brokerage business in foreign and domestic animal hair, with temporary office at 220 Broadway, New York City.

**Louis H. Dimick**, formerly connected with the Clapp, Riley & Hall Equipment Company, at Chicago and Pittsburgh, Pa., and **C. William Benz**, formerly with the Cudahy Packing Company, and before that with the Standard Steel Car Company, have joined the organization of **Iron & Steel Products, Inc.**, Chicago. Both will have their headquarters in the general office at Hegewisch.

**C. Parker Holt**, executive vice-president of the **Caterpillar Tractor Co.**, Peoria, Ill., has been appointed vice-president at San Leandro, Cal., where he will direct all activity and co-ordinate the work of the several departments with those in Peoria. He has been succeeded by **A. T. Brown**, vice-president administering the accounting, treasury, traffic and parts departments. **L. B. Neumiller**, director of

industrial relations, has been elected vice-president in charge of the parts, service, traffic and industrial relations departments. **D. G. Sherwin**, treasurer, has been elected vice-president in charge of the advertising, sales and treasury departments, and has been succeeded by **D. A. Robison**, assistant treasurer.

**Theodore R. Weber**, mechanical engineer of the **Railway Steel-Spring Division of the American Locomotive Company**, with headquarters at Latrobe, Pa., has been appointed chief mechanical engineer, succeeding **Alan N. Lukens**, deceased, and **Bennett Burgoon, Jr.**, assistant mechanical engineer, has been appointed mechanical engineer, to succeed Mr. Weber.

**Bomar Gross, Inc.**, Jamaica, N. Y., the **Drake Supply Company**, Los Angeles, Cal., the **Iowa Machinery & Supply Company**, Des Moines, Iowa, the **Wilkins Pipe & Supply Company**, Peoria, Ill., and the **Woodmanse Manufacturing Company**, Freeport, Ill., have been appointed distributors for the tubular products of the **Republic Steel Corporation**, Cleveland, Ohio.

**Allan Wallace**, general traffic manager for the **Johns-Manville Corporation**, New York, for the past 23 years, has been appointed to the new position of director of traffic, and **Raymond J. Newberry**, who joined its traffic organization in May, 1916, and since November, 1928, served as assistant general traffic manager, has been appointed manager, general traffic department. Formerly, Mr. Wallace served for several years with the Grand Trunk Western until he became general agent at Omaha, Neb. He resigned from railway work to become traffic manager for the Philip Carey Company, and later was appointed railway sales manager for that company. In June, 1914, he became associated with Johns-Manville as general traffic manager.

## OBITUARY

**Frederick W. Brill**, for many years assistant treasurer of the J. G. Brill Company, Philadelphia, Pa., died in the Jefferson hospital, Philadelphia, on October 23. Starting in 1896, in the engineering department, Mr. Brill was transferred to the sales department in 1906, making his headquarters at St. Louis, Mo.

**Clarence M. Burnett**, vice-president of the Lewis Bolt & Nut Co., Minneapolis, Minn., and one of the founders of the company, died at his home in St. Paul on October 31. Mr. Burnett was born on December 31, 1883, at Chippewa Falls, Wis. After attending public schools at Bethel, Vt., he was graduated from Norwich College, Northfield, Vt. Mr. Burnett was for many years in the steel business at Bethlehem, Pa. Shortly before the World War he went to Minneapolis, where he was connected with the Twin City Forge & Foundry Co. After serving eight years as sales manager for Paper Calmenson & Co., he aided in the formation of the Lewis Bolt & Nut Co.

## Equipment and Supplies

### LOCOMOTIVES

THE CHICAGO, BURLINGTON & QUINCY has placed an order with company shops for the construction of five locomotives in 1937 and 1938. Plans for the construction of this equipment were reported in the *Railway Age* of October 16.

THE CHICAGO, MILWAUKEE, ST. PAUL & PACIFIC is making informal inquiry for prices of seven locomotives, including two Hiawatha type and five 4-6-4 type. The information sought is preparatory to seeking authority of the district court to secure additional motive power.

READING COMPANY.—E. W. Scheer, president of the Reading Company-Central of New Jersey, announced on November 5 that contracts have been awarded for eight Diesel switching engines for the Reading Company, at an approximate cost of \$600,000. Two of the switching engines will be of 900-hp. each and constructed by the American Locomotive Company and six engines of 600-hp. each will be built by the Electro-Motive Corporation.

### FREIGHT CARS

THE DELAWARE, LACKAWANNA & WESTERN is asking for prices on 500 hopper cars of 50 tons' capacity.

THE CHICAGO, BURLINGTON & QUINCY has placed orders with company shops for the construction of freight cars in 1937 and 1938, including 250 automobile cars, 600 box cars, 100 hopper cars and 400 coal cars. Plans for the construction of this equipment were announced in the *Railway Age* of October 16.

### PASSENGER CARS

THE CHICAGO, BURLINGTON & QUINCY has ordered 11 stainless steel, lightweight passenger cars from the Edward G. Budd Manufacturing Company, including three dining cars and three chair cars for the "Aristocrat," two 40-seat dinette coaches for the Denver "Zephyr," one 40-seat dinette-coach for the original "Zephyr" and two chair cars to be used jointly by the Colorado & Southern and the Fort Worth & Denver City. Plans for the purchase of these cars were announced in the *Railway Age* of October 16.

### IRON AND STEEL

THE SOUTHERN PACIFIC is inquiring for 75,000 tons of rails.

OPERATION OF THE 24-MILE, 2 ft. 6 in.-gauge Barbados Government Railway will be discontinued under a bill recently passed by the local House of Assembly, which, in addition, provides for the pension of the railroad staff and enables the governor of the island to dispose of the property now held by the railway. There is under discussion a proposal to convert the railway right of way into a highway, but nothing definite has been decided.

## Financial

ATCHISON, TOPEKA & SANTA FE.—*Abandonment*.—This road has applied to the Interstate Commerce Commission for authority to abandon its 8.98-mile line between Davis, Okla., and Sulphur.

BALTIMORE & OHIO.—*Abandonment*.—This road has applied to the Interstate Commerce Commission for authority to abandon a 1.49-mi. section of its Huff Run branch in Carroll County, Ohio.

BALTIMORE & OHIO.—*Collateral*.—This road has applied to the Interstate Commerce Commission for a modification of the latter's order of December 19, 1935, so as to extend until December 31, 1939, the period in which the applicant may pledge its \$5,000,000 refunding and general mortgage 6 per cent bonds, Series C, as collateral security for short-term borrowing and to further secure loans already obtained.

CHICAGO, BURLINGTON & QUINCY.—*Abandonment*.—The Interstate Commerce Commission, Division 4, has authorized this company to abandon the part of its Quincy-Pike branch extending from Rockport, Ill., to Pike, 6.08 miles.

CHICAGO, ROCK ISLAND & PACIFIC.—*Abandonment*.—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon a line extending from De Baliviere Avenue, St. Louis, Mo., to Lackland Junction, 6.7 miles.

CHICAGO, ROCK ISLAND & PACIFIC.—*Lease of C., R. I. & G.*—Trustees of this road have applied to the Interstate Commerce Commission for authority to lease the Chicago, Rock Island & Gulf—Trustees of the latter having joined with a request for permission to grant the lease.

DENVER & RIO GRANDE WESTERN.—*Reorganization*.—The Interstate Commerce Commission, Division 4, has denied the petition of the Insurance Group Committee for permission to amend its plan of reorganization and unification filed in the reorganization proceedings of this company.

DULUTH, MISSABE & IRON RANGE.—*Oral Argument*.—The Interstate Commerce Commission, Division 4, has set November 30 as the date for oral argument in the case of the application of this company to acquire the properties of the Duluth, Missabe & Northern and the Duluth & Iron Range.

FONDA, JOHNSTOWN & GLOVERSVILLE.—*Reorganization*.—Interstate Commerce Commission hearings in connection with the reorganization of this road will be held on November 12 before Examiner R. T. Boyden at the Hotel New Yorker, New York, instead of at Washington, D. C., as previously scheduled.

LEHIGH VALLEY.—*Bonds*.—The Interstate Commerce Commission, Division 4, has authorized this company to pledge and repledge from time to time, to and including June 30, 1939, all or any part of \$3,600,000 of general consolidated mortgage

5 per cent bonds, due in 2003, and such additional amounts of like bonds as may be required to maintain the pledging ratio requested, as collateral security for two short-term notes amounting to \$1,400,000, or for any renewals thereof.

LEHIGH VALLEY.—*Bonds*.—The Interstate Commerce Commission, Division 4, has authorized this company to pledge and repledge from time to time, to and including December 31, 1939, all or any part of \$1,000,000 of general consolidated mortgage 5 per cent bonds, due in 2003, and such additional amounts of like bonds as may be required to maintain the pledging ratio requested, as collateral security for a promissory note in the sum of \$400,000 to the order of the Marine Midland Trust Company of New York, or for any renewal thereof.

LOUISIANA & ARKANSAS.—*Acquisition and Merger*.—This company has applied to the Interstate Commerce Commission for authority to acquire the Louisiana, Arkansas & Texas through stock acquisition. This company has also filed a joint application with the Louisiana, Arkansas & Texas to merge all properties into the Louisiana & Arkansas.

MINNEAPOLIS & ST. LOUIS.—*Abandonment*.—The Interstate Commerce Commission, Division 4, has authorized the co-receivers to abandon a line extending from Kalo Junction, Iowa, to Otho, 2.7 miles.

MINNEAPOLIS & ST. LOUIS.—*Dismemberment*.—The Interstate Commerce Commission, Division 4, has extended to December 17 the date for filing exceptions to the proposed report of the commission's examiner in the dismemberment proceedings of this company.

NEW YORK, NEW HAVEN & HARTFORD.—*Abandonment*.—The Interstate Commerce Commission, Division 4, has authorized the trustees to abandon part of a branch line extending from Melrose station, Conn., to Ellington station, 3.3 miles.

NEW YORK, NEW HAVEN & HARTFORD.—*Reorganization*.—The Interstate Commerce Commission, Division 4, has ordered that the sum of \$5,991, be paid to the Boston law firm of Choate, Hall and Stewart for their services in the reorganization proceedings of this company.

The commission has also authorized the Connecticut Railway & Lighting Company to intervene in the reorganization proceedings of this company.

NEW YORK, SUSQUEHANNA & WESTERN.—*Reorganization*.—The Interstate Commerce Commission, Division 4, has dismissed the application of Harry P. Schaub for authority to form a protective committee to represent the holders of first mortgage, 5 per cent bonds of the Midland of New Jersey in the reorganization proceedings of this company. The dismissal was without prejudice to the renewal of the application.

NORTHERN PACIFIC.—*Abandonment*.—This road has applied to the Interstate Commerce Commission for authority to abandon its so-called Sunnyside connection,



extending from Sunnyside Junction, Wash., to Granger, 2.9 miles.

**ST. LOUIS SOUTHWESTERN.—Reorganization.**—The Interstate Commerce Commission, Division 4, has authorized Horace A. Davis, Benjamin S. Lichtenstein and Sylvan Gotshal to serve as a protective committee for holders of first mortgage bonds of the Stephenville, North & South Texas and for holders of first mortgage bonds of the Central Arkansas & Eastern in the reorganization proceedings of this company.

**SPOKANE, PORTLAND & SEATTLE.—Bonds of Oregon Electric.**—This road has applied to the Interstate Commerce Commission for authority to assume liability as guarantor of \$1,951,000 of first mortgage gold bonds of the Oregon Electric in connection with which the latter has applied for authority to extend the maturity date from May 1, 1932, to May 1, 1958. The extension plan contemplates a waiver of interest from May 1, 1932, to May 1, 1937, and for a reduction of the rate of interest after the latter date from 5 per cent to 3 per cent.

**TENNESSEE, ALABAMA & GEORGIA.—Securities.**—The Interstate Commerce Commission, Division 4, has authorized this company to issue (a) \$590,525 of capital stock, consisting of 118,105 shares of a par value of \$5 a share, (b) rights to subscribe for 15,405 of such shares of stock, and (c) \$1,027,000 of first (collateral) lien 20 year 4 per cent sinking fund bonds; 102,700 shares of the stock, the rights to subscribe for the 15,405 additional shares of stock, and the \$1,027,000 of bonds to be delivered to a syndicate in exchange for all the outstanding common capital stock of this company, consisting of 2,000 shares of the par value of \$100 a share, and certain other assets; and the 15,405 additional shares of stock, represented by the rights, to be sold at not less than \$5 a share and the proceeds used to pay the company's organization expenses, certain taxes, and other items.

**WABASH.—Interest Payment.**—Payment of \$800,380 in interest on five bond issues of the Wabash has been authorized by the Federal district court at St. Louis. The payments will be made on the basis of 80 per cent of the \$1,000,475 falling due November 1 and January 1. The obligations affected are the first mortgage bonds of the Wabash, the Columbia & St. Louis, the Detroit & Chicago extension and the Des Moines division, and the first-lien terminal bonds. Application for authority to pay 80 per cent of the interest, amounting to \$115,309, on bonds of the Toledo & Chicago and on the Omaha division bonds, due March 1 and April 1, was deferred, the court advising the receivers to renew their request after the first of the year.

**WESTERN PACIFIC.—Trustees' Certificates.**—The Interstate Commerce Commission, Division 4, has authorized the trustees to issue \$3,600,000 of trustees' certificates, to be sold at not less than par and accrued interest if they bear interest at the rate of 4 per cent per annum, but if they bear interest at a lower rate, to be sold at such an amount less than par as would make

the effective rate not exceeding 4 per cent per annum, and the proceeds used for maintenance and capital expenditures.

**WILKES-BARRE & EASTERN.—Trustee.**—Joseph P. Jennings, a consulting engineer of Scranton, Pa., has applied to the Interstate Commerce Commission for ratification of his appointment as trustee of this road, which is being reorganized under Section 77b of the bankruptcy laws.

### Dividends Declared

Bangor & Aroostook.—Common, 62c; Cumulative Preferred 1¼ per cent, both payable January 1 to holders of record November 30.  
Virginian.—\$2.00, payable December 23 to holders of record December 13.

### Average Prices of Stocks and Bonds

	Nov. 9	Last week	Last year
Average price of 20 representative railway stocks..	32.87	32.92	58.99
Average price of 20 representative railway bonds..	67.56	68.97*	83.99

\* Corrected.

## Construction

**ATLANTIC COAST LINE.**—The Interstate Commerce Commission, Division 4, has authorized this company to construct and operate an extension of its line beginning at a point of connection with its Delco to Acme branch and extending in a northerly direction to a point at or near the northern boundary of the right-of-way of the Seaboard Air Line to a connection with tracks to be constructed by the Riegel Paper Corporation, 0.95 mile, all in Columbus County, N. C.

**BALTIMORE & OHIO.**—Contracts have been let by this road as follows: Construction of freight facilities at Third and R streets, N.E., Washington, D. C., to cost \$34,000, to Lee T. Turner, Washington, construction of bridge over Cuyahoga river, Cleveland, Ohio, to cost \$25,000 to The Hunkin-Conkey Construction Company, Cleveland, and for additions to the banana warehouse at Pittsburgh, Pa., to cost \$55,000, to the Parkman Construction Company, Pittsburgh.

**CENTRAL OF NEW JERSEY.**—A contract has been given to J. F. Chapman & Son, Inc., Hillside, N. J., for the construction of drains, sewers, collecting basin, culverts, water lines, railroad embankment and miscellaneous construction on the main line and Newark and Elizabeth branch, Central division, at Elizabethport, N. J., as part of a grade crossing elimination project. The cost of the work involved is \$59,912.

**CHESAPEAKE & OHIO.**—Contracts have been let by this road as follows: To the Virginia Engineering Company, Newport News, Va., for the construction of five warehouses and to the Automatic Sprinkler Corporation of America, Richmond, Va., for the installation of sprinkler systems, at Newport News and Morrison, Va., to cost about \$140,000; to Haley, Chisholm & Morris, Inc., Charlottesville, Va., for additional riddapping of roadbed embankment for flood protection from Richmond,

Va., to Gladstone, to cost about \$111,600; to the Combs Lumber Company, Lexington, Ky., for rebuilding the west portion of freight house at Lexington, Ky., to cost about \$30,923; to the Commonwealth Edison Company, Chicago, Ill., to motorize Calumet grain elevator "A" and install new fire and well pumps at Chicago, to cost about \$63,000. Chesapeake & Ohio company forces will rebuild 16 column pedestals of the Richmond viaduct, at Richmond, Va., to cost about \$44,000. Bids will be received about November 15 for the replacing of old untreated timber section of the roundhouse with treated timber and steel construction at Handley, W. Va., to cost about \$36,600. Bids were received on October 21, but contract has not yet been awarded, for the construction of a 300-ton concrete coaling station, 150-ton frame sandhouse and track changes to replace existing frame coal trestle at Huntington, W. Va., to cost about \$46,000. Bids will be asked for on November 15 for changing line at MP 14 and strengthening and rebuilding roadbed embankment at MP 12.5 and MP 14.6, Big Sandy subdivision, at Buchanan, Ky., to cost about \$129,850.

**MISSOURI PACIFIC.**—An ordinance providing for the elimination of the adjacent grade crossings of Gravois avenue and Chippewa street with the tracks of this company by constructing separate underpasses at a cost of \$750,000, was passed by the Board of Aldermen of the city of St. Louis, Mo., on November 5. The street committee of the board had earlier discarded an alternative plan for a single underpass, to cost \$600,000, midway between the thoroughfares with connections to both of them. Of the total cost of the two underpasses the city will contribute \$150,000 from grade crossing bond funds, and \$600,000 will come from a federal grade crossing account through the state.

**NEW YORK CENTRAL.**—Contracts have been let by this road for work in New York City as follows: Planting and landscaping work between West 135th and Dyckman streets, Riverside Park, to the Roman Landscape Construction Co., New York; construction of a factory and warehouse, 501-557 West 30th street, to W. F. Babor & Company, Inc., New York; construction of substructure and superstructure of viaduct between West 10th and Charles streets, to the Duffy Construction Corporation, New York; landscaping in Riverside Park between West 107th street and St. Clair Place, to Tully & Di Napoli, Inc., Long Island City, N. Y.; lamp standard, etc., electric wiring, West 180th and Dyckman streets, to J. Livingston & Company, New York. A contract has been let to the Walsh Construction Company, Syracuse, N. Y., for the construction of substructure and superstructure and approaches, including the manufacture and delivery of superstructure and the elimination of grade crossing at Belle Isle, N. Y.

**PITTSBURGH & LAKE ERIE.**—A contract has been let to the W. T. Grange Construction Company, Pittsburgh, Pa., for the construction of a power house at Pittsburgh, to cost about \$244,000.



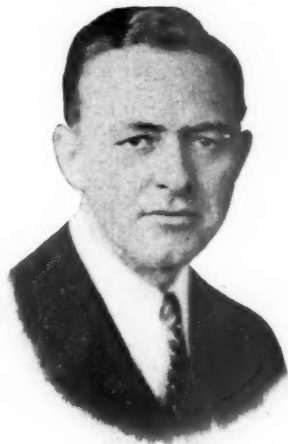
# Railway Officers

## EXECUTIVE

**E. J. Halberg**, general counsel of the Pittsburg & Shawmut, has been elected vice-president, with headquarters, as before, at Kittanning, Pa. Mr. Halberg served as general counsel of the company since 1930, prior to which time he was in the law department of the Nickel Plate at Cleveland, Ohio.

**Robert Edward Simpson**, assistant vice-president of the Southern, with headquarters at Washington, D. C., retired on November 1, as noted in the *Railway Age* of October 30. Mr. Simpson was born on October 20, 1869, at Glen Alpine, N. C., and received his education in the public schools. He entered railroad service on April 13, 1882, as water boy on the section force of the Southern. He served subsequently as section laborer, section foreman, extra gang foreman, work train conductor, freight train conductor, passenger conductor, track supervisor, roadmaster, trainmaster, assistant superintendent, superintendent, general superintendent, general manager and assistant vice-president.

**Harry Ashby DeButts**, who has been appointed vice-president in charge of operation of the Southern, with headquarters



Underwood &amp; Underwood

**H. A. DeButts**

at Washington, D. C., as noted in the *Railway Age* of October 30, was born on October 13, 1895, at Delaplane, Va. Mr. DeButts attended elementary and high schools in Virginia and was graduated from Virginia Military Institute in 1916, with the degree of B.S. in civil engineering. He entered railroad service with the Southern on July 6, 1916, serving until June 30, 1917, as student apprentice, section and extra force and section foreman at Buena, Va. He then became general yard foreman at Alexandria, Va., being appointed assistant track supervisor at Strasburg, Va., on November 16, 1917. After service with the U. S. Marine Corps, he returned to the Southern as assistant track supervisor at Manassas, Va., on June 1, 1919, becoming track supervisor at Strasburg four months later. On Decem-

ber 1, 1920, he became assistant trainmaster at Birmingham, Ala.; on June 4, 1921, trainmaster at Sheffield, Ala.; on November 1, 1923, assistant superintendent at Sheffield, and on June 18, 1924, superintendent of the Mobile division at Selma, Ala. He became superintendent of the Georgia Southern & Florida at Macon, Ga., on July 1, 1925. Mr. DeButts was appointed superintendent of the Washington division of the Southern at Alexandria, Va., on July 15, 1926; superintendent of the Danville division at Greensboro, N. C., on February 6, 1929; and general superintendent of the Piedmont district at Danville, Va., on April 1, 1930. On August 1, 1934, he became general manager of the eastern lines at Charlotte, N. C., which position he held until his appointment as vice-president in charge of operation, effective October 21.

## OPERATING

**F. B. Lyman** has been appointed terminal trainmaster on the Grand Trunk Western at Detroit, Mich., to succeed **Frank L. Sample**, who has retired.

**M. R. Clinton** has been appointed assistant superintendent car service, New York Central System, succeeding **G. C. Barnum**, retired.

**A. C. Ogg** has been appointed trainmaster on the Texas & Pacific, with headquarters at Big Spring, Tex., succeeding **C. Percy**, who has been assigned to other duties.

**B. F. Harris** has been appointed superintendent of terminals of the Southern at St. Louis, Mo., in which capacity he will be in charge of the St. Louis, East St. Louis and Belleville terminals. **J. Fritz**, superintendent of terminals at East St. Louis, Ill., has been appointed terminal trainmaster at the same point.

**Stanley Herbert Bullett**, chairman of the Express Traffic Association of Canada, with headquarters at Montreal, Que., has been appointed superintendent of the eastern and northern Ontario division of the Canadian National Express, with headquarters at Toronto, Ont., succeeding **G. J. Bothwell**, who has retired on pension. Mr. Bullett was born in Cardiff, Wales, in 1888 and has served with the express company since 1912. He was appointed chairman of the Express Traffic Association of Canada in 1932.

**Howard O. McAbee**, inspector of passenger service of the Baltimore & Ohio, with headquarters at Baltimore, Md., has been appointed acting manager of the dining car and commissary department, succeeding **F. A. Stine**, who has been granted a leave of absence on account of ill health. Mr. McAbee was born in Baltimore on July 24, 1892, and was educated in the public schools of that city. Entering the service of the Baltimore & Ohio in 1910, he became a stenographer in the engineering department, and on January 1, 1916, was made chief clerk in the employment and record bureau. He was next made chief of the pass bureau on February 1, 1920, and became secretary to vice-

president on May 1, 1921. In this position he remained nearly eight years, being advanced to inspector of passenger service on January 1, 1929. In this special work, Mr. McAbee initiated many improvements, the latest of these being the installation of impact recorders on B. & O. passenger trains.

**H. C. Rochester**, superintendent of passenger train service of the Canadian National, has been appointed general car accountant, with headquarters at Montreal, Que., as reported in the *Railway Age* of October 6. Mr. Rochester was born in Prince Albert, Sask., in 1892 and commenced his railway career as stenographer in the master mechanic's office of the Canadian Pacific at Winnipeg in 1907. He joined the Canadian Northern at Winnipeg, Man., in the same year, holding various positions until his appointment as chief clerk to the assistant general manager of the Canadian Northern at Vancouver, B. C., in 1915. After service with the Royal Flying Corps and the Royal Air Force during the war, he entered the service of the Canadian National as chief clerk to the vice-president at Toronto in 1918. In 1922 he became chief clerk to the vice-president and general manager at Toronto, Ont., and in 1923 was transferred to Montreal as chief clerk to the vice-president in charge of operation and maintenance, later being appointed office assistant. In 1934 he was appointed superintendent of passenger train service, which position he held until his present appointment.

**P. T. McCarthy**, assistant superintendent on the Union Pacific at Portland, Ore., who has been promoted to superintendent of the Washington division, with headquarters at Spokane, Wash., as reported in the *Railway Age* of October 30, has been connected with this company for 23 years. He was born on June 22, 1896, at San Francisco, Cal., and after a public school and business college education he entered the service of the Union Pacific in 1914 as a messenger in the telegraph department. Two years later he became an operator at Biggs, Ore., and during the next few years he served as agent and dispatcher at various points in Oregon. In

**P. T. McCarthy**

1934 he was promoted to chief dispatcher at Spokane, being further advanced to trainmaster at Walla Walla, Wash., in

January, 1935. In November, 1936, he was further promoted to assistant superintendent of the Oregon division, with headquarters at Portland, Ore., where he was located at the time of his promotion to superintendent of the Washington division, which was effective on October 15.

## TRAFFIC

**Paul C. Potter** has been appointed general livestock and dairy agent of the St. Louis-San Francisco, with headquarters at Springfield, Mo., to succeed **E. F. Tillman**, retired.

**V. J. Courtwright** has been appointed division freight and passenger agent of the Missouri Pacific, with headquarters at Springfield, Mo., to succeed **J. W. Daniels**, retired.

**William F. Niehaus**, assistant to the purchasing agent of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., has been appointed fuel agent, with the same headquarters, to succeed **J. M. Johnston**, retired.

**R. G. Hawkinson**, assistant general freight agent of the Chicago Great Western, with headquarters at Chicago, has been appointed to the newly created position of assistant to the traffic manager, with the same headquarters. **E. J. Forster**, chief clerk in the traffic department, has been promoted to assistant general freight agent at Chicago, to succeed Mr. Hawkinson.

**Richard L. Butt**, who has been appointed assistant freight traffic manager of the Southern, with headquarters at Mobile, Ala., was born at Midway, Ala., and was educated at the University of Florida. He began his railway career with the Atlantic Coast Line and later entered the employ of the Southern at Atlanta, Ga., as clerk in the general freight office. Subsequently he served as chief clerk to the general freight agent, general freight agent and assistant general freight agent at Macon, Ga., which position he has held until November 1, when he was promoted to assistant freight traffic manager at Mobile, Ala.

**A. T. Stovall, Jr.**, assistant freight traffic manager of the Southern, with headquarters at Mobile, Ala., who has been appointed assistant traffic manager, with headquarters at St. Louis, Mo., as reported in the *Railway Age* of November 6, was born on February 6, 1898, at Okolona, Miss. After obtaining a university education Mr. Stovall entered the naval air service as a cadet officer, in which capacity he served during the World War. After the close of the war he was connected with the Green Star Steamship Corporation, being located on the Pacific Coast for several years and in the Far East, where his headquarters were located at Singapore. He entered railway service in 1925 as a traveling freight agent on the Columbus & Greenville. In February, 1930, he severed his connection with this company to go with the Southern as general agent at Havana, Cuba. From November, 1931, to June, 1932, he served as assistant for-

eign freight traffic manager, with headquarters at Louisville, Ky. At the end of this period he was transferred to Mobile as assistant freight traffic manager, which position he held until his recent appointment as assistant traffic manager at St. Louis, which was effective on November 1.

**John R. Mills**, assistant freight traffic manager of the Kansas City Southern, with headquarters at Kansas City, Mo., has been promoted to freight traffic manager, with the same headquarters, to succeed **G. B. Wood**, who has been elected vice-president in charge of traffic, and has been succeeded by **Charles P. Hoch**, general agent at New York. Mr. Mills was born near Sherman, Tex., on February 20, 1874, and



Moore Studio

John R. Mills

at the age of 13 began work as a messenger for the Kansas City, Fort Scott & Memphis at Kansas City. Later he entered the employ of the Atchison, Topeka & Santa Fe at Las Vegas, N. M., and a year later, in 1894, returned to the Kansas City, Fort Scott & Memphis. On June 1, 1901, he entered the employ of the Kansas City Southern as a rate and division clerk and, after filling various positions in the traffic department, was promoted to assistant general freight agent on March 1, 1909. On May 1, 1929, he was promoted to assistant freight traffic manager, which position he has held until his recent promotion.

## ENGINEERING AND SIGNALING

**E. L. Anderson**, roadmaster of the St. Louis-San Francisco, with headquarters at Poplar Bluff, Mo., has been promoted to division engineer of the eastern division, with headquarters at Springfield, Mo., to succeed **D. E. Gelwix**, resigned.

**J. B. Dawson**, division engineer of the Tucson division of the Southern Pacific, with headquarters at Tucson, Ariz., has been transferred to the Los Angeles division, with headquarters at Los Angeles, Cal., to succeed **G. W. Corrigan**, who has been granted a leave of absence, and has been succeeded by **H. E. Stansbury**, division engineer of the Rio Grande division, with headquarters at El Paso, Tex., who, in turn, has been succeeded by **F. A. Feikert**, assistant division engineer at Portland, Ore.

**Charles H. Morse**, assistant engineer on the New York Central System, with

headquarters at New York, has been appointed office engineer to the chief engineer maintenance of way, with headquarters at New York, succeeding **John F. McDonald**, who retired on October 30, after almost 55 years of service. **G. T. Donahue**, supervisor of track, with headquarters at New York, has been appointed assistant engineer in the office of the chief engineer maintenance of way, at New York, succeeding Mr. Morse.

**F. J. Nevins**, valuation engineer of the Chicago, Rock Island & Pacific, with headquarters at Chicago, has been assigned to other duties at his own request because of continued ill health. The position of valuation engineer is abolished. **C. P. Richardson**, engineer water service at Chicago, has been promoted to engineer capital expenditures, with supervision over valuation and roadway expenditures for the investment account, and has been succeeded by **J. E. Tiedt**, engineer of water treatment at Chicago. **W. J. Govett**, assistant engineer in the valuation department at Chicago, has been appointed assistant engineer of capital expenditures. **Bert Matheis**, supervisor of bridges for lines east of the Missouri river, with headquarters at Chicago, has been promoted to acting division engineer at Ft. Worth, Tex., and has been succeeded by **S. P. Perkins**.

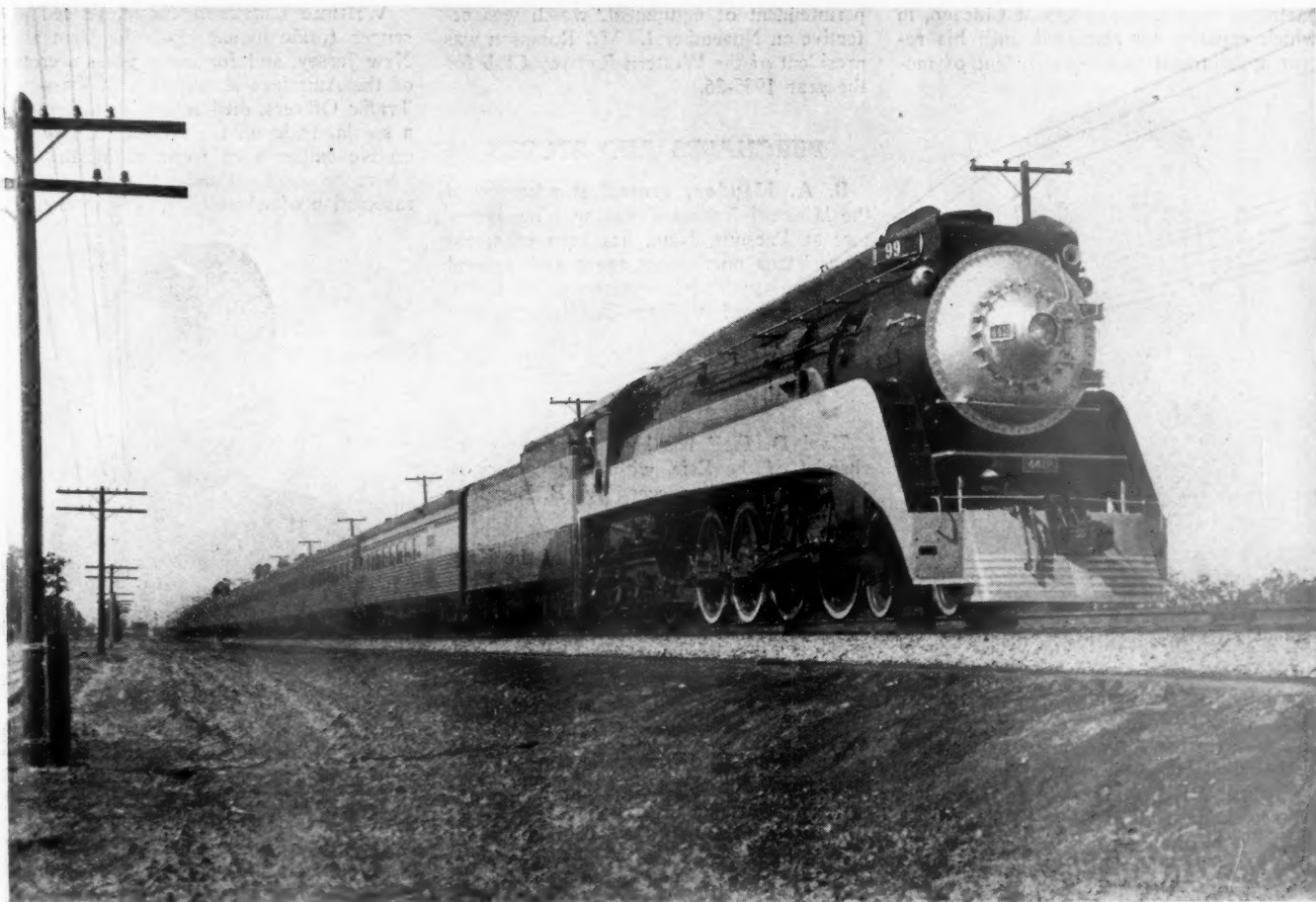
## MECHANICAL

**A. B. Childs** has been appointed acting mechanical engineer of the Northern Pacific, with headquarters at St. Paul, Minn., to succeed **G. F. Endicott**, who has been granted a leave of absence.

**Willard J. Dann** has been appointed mechanical inspector of the Chicago, Burlington & Quincy, with headquarters at Chicago, to succeed **Louis G. Kunzer**, who has retired from active service after having been in the employ of this company 40 years.

**Oscar G. Pierson**, general foreman on the Atchison, Topeka & Santa Fe, at Arkansas City, Kan., has been promoted to master mechanic of the Oklahoma and Southern Kansas divisions, with headquarters at Arkansas City, to succeed **John K. Nimmo**, who has retired.

**G. C. Christy**, who has been appointed superintendent of motive power of the Illinois Central, with headquarters at Chicago, as reported in the *Railway Age* of October 30, has a record of more than 39 years of experience with this company. He took his first position with the Illinois Central on June 1, 1898, serving as a painter apprentice at Water Valley, Miss., for two years, at the end of which period he was transferred to the machine shop as a machinist apprentice. During the ensuing years Mr. Christy was advanced through various positions in the machine shop until October, 1911, when he became general foreman. In December, 1914, he was transferred to McComb, Miss., where he remained until July, 1917, when he was promoted to master mechanic, with headquarters at Vicksburg, Miss. On November 1, 1929, he was further advanced to the position of superintendent of the car de-



# HANDLES 785 *passengers per day*

Early in 1937 the Southern Pacific Railway Company placed in service their famous streamline trains on the "Daylight Specials" between San Francisco and Los Angeles. " " " During the first six months of operation the "Daylight" trains handled 144,430 passengers or a daily average of 785 persons. " " " The Streamline Motive Power for these trains was built by Lima.

LIMA LOCOMOTIVE WORKS, INCORPORATED. LIMA, OHIO





partment, with headquarters at Chicago, in which capacity he remained until his recent appointment as superintendent of mo-



G. C. Christy

tive power, which was effective on November 1.

**Lee Robinson**, who has been appointed superintendent of equipment of the Illinois Central, with headquarters at Chicago, as announced in the *Railway Age* of October 30, has had broad experience in railroad mechanical matters. He was born in Clay Center, Kan., and after a public school education in Kansas City he served as an assistant instructor in manual training. Subsequently he left educational work to become a draftsman with a firm of con-



Lee Robinson

sulting bridge engineers in Kansas City. His railroad career began as a draftsman and special apprentice with the Kansas City Southern at Pittsburg, Kan. Later he served three years in the mechanical department of the Missouri Pacific at St. Louis, Mo., and three years with the St. Louis-San Francisco at Springfield, Mo. He entered the service of the Illinois Central in charge of general engineering work connected with the maintenance and design of locomotives and cars, subsequently holding the positions of mechanical valuation engineer and shop engineer. On March 10, 1930, he was appointed assistant to the general superintendent of motive power at Chicago, which position he was holding at the time of his recent appointment as su-

perintendent of equipment, which was effective on November 1. Mr. Robinson was president of the Western Railway Club for the year 1935-36.

## PURCHASES AND STORES

**S. A. Hayden**, general storekeeper of the Missouri-Kansas-Texas, with headquarters at Parsons, Kan., has been promoted to assistant purchasing agent and general storekeeper, with headquarters at St. Louis, Mo., to succeed **William F. Niehaus**, promoted.

## SPECIAL

**Earl D. Hall** has been appointed chief chemist of the Erie, with headquarters at Meadville, Pa., to succeed **W. B. Landon**, who has retired.

**Walter A. Johnson**, editor of the *Katy Employees' Magazine* of the Missouri-Kansas-Texas, with headquarters at St. Louis, Mo., has been appointed publicity director, with the same headquarters.

## OBITUARY

**Theodore C. Fischer**, auditor of disbursements for the Central of New Jersey, with headquarters at Jersey City, N. J., died on November 8 at his home in Elizabeth, N. J., of a cerebral hemorrhage. Mr. Fischer was born in Philadelphia 58 years ago and was graduated from Rutgers University. He started in the engineering department of the Central of New Jersey 38 years ago.

**E. T. Horn**, former chief of yard and terminal operations of the Baltimore & Ohio, died on November 6, at San Diego, Cal., where he had resided since his retirement from active service in 1929. He was 84 years old. Mr. Horn was a native of Baltimore County, Md., where he was born on October 26, 1853. He was educated in the public schools of Chattanooga, Tenn., Boston, Mass., and Chicago, Ill., and began his railroad career at the age of 14, as a messenger with the Memphis & Charleston (Southern). After serving as general yardmaster and superintendent for different railroads in east Tennessee, Virginia and Georgia, he became general manager of the Macon & Northern (Central of Georgia). Next he became identified with the Chicago & Northwestern as superintendent, following which he was made fuel agent and superintendent of the Missouri Pacific. Later he went to the New York, New Haven & Hartford as assistant superintendent, New York City, and then to the Canadian Pacific as assistant to general manager. Upon affiliation with the Baltimore & Ohio in 1896, Mr. Horn became supervisor of terminals, was made general supervisor of terminals in 1920 and was advanced to chief of yard and terminal operations on June 1, 1922. When he retired in 1929, he bore a national reputation in the railroad field as one of the greatest terminal experts in the country, and the B. & O. retained his services in an advisory capacity until March of this year, when he was pensioned.

**William Clarkson Hope**, retired passenger traffic manager of the Central of New Jersey, and for many years secretary of the American Association of Passenger Traffic Officers, died following a stroke on a special train on the Atlantic Coast Line on November 6 en route to Miami, Fla., where he was to attend a convention of the association of which he was secretary. Mr.



W. C. Hope

Hope was born on June 13, 1859, at Somerville, N. J., and was educated at Wyckoff's Preparatory School, Elizabeth, N. J., and Dr. Chapin's Collegiate School, New York. He began railway work with the Central of New Jersey on May 1, 1878, as a clerk in the passenger department, serving successively in various minor capacities until his promotion to chief clerk. He was later advanced to the position of assistant general passenger agent and general passenger agent. On March 1, 1920, he was appointed passenger traffic manager of the system, from which position he retired on January 1, 1929. During the period of federal control, from 1918 to 1920, Mr. Hope was passenger traffic manager of the joint Jersey Central and Reading lines. He has been secretary of the American Association of Passenger Traffic Officers since 1911.

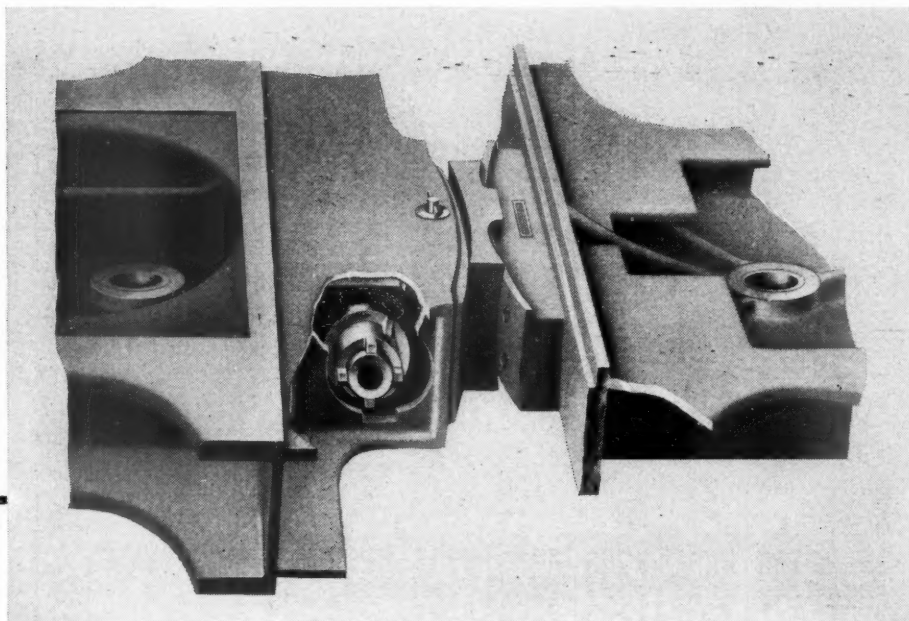
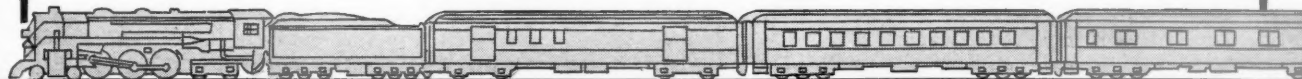
LARGE-SCALE MAPS SHOWING details of existing transportation system in 13 states have been prepared by the Bureau of Public Roads of the U. S. Department of Agriculture in cooperation with the U. S. Geological Survey. The maps are on a scale of four miles to the inch, and, a Department of Agriculture statement says, "are believed to be the most complete of the kind yet made." They are produced on sheets of uniform 26 in. by 36 in. size.

The maps show in color the location and character of practically all transportation arteries such as the federal-aid and state highway systems, important secondary highway connections, air lanes and landing fields, railroads, and navigable channels and canals.

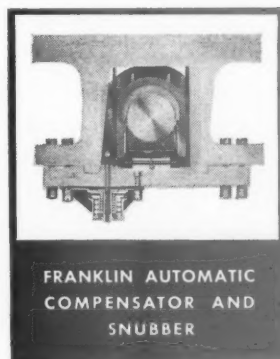
The maps are obtainable by purchase from the Superintendent of Documents, Washington, D. C. Following is a list of the 13 states for which the maps are now available: Connecticut, Delaware, Florida, Iowa, Maine, Maryland, Massachusetts, New Hampshire, Oregon, Rhode Island, South Carolina, Vermont and Washington.

*Tables of Revenues and Expenses of Railways begin on next left-hand page*

# "STEADY MILES"



You never see excessive oscillation between engine and tender on a Radial Buffer-equipped locomotive. » » » The Buffer prevents it by spring-held frictional resistance between the buffer faces, yet at all times movement between these surfaces is unlimited in any direction. » » » By maintaining constant correct relationship between engine and tender and by dampening oscillation, the Type E-2 Radial Buffer vastly improves locomotive riding and safety of operation. » » » Its twin, the Franklin Automatic Compensator and Snubber, maintains accurate driving box adjustment at all times and further improves locomotive riding, reduces maintenance and increases mileage between shoppings.



Because material and tolerances are just right for the job, genuine Franklin repair parts give maximum service life.

## FRANKLIN RAILWAY SUPPLY COMPANY, INC.

NEW YORK

CHICAGO

MONTREAL

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1937

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1937														
Name of road	Av. mileage operated during period	Operating revenues			Operating expenses				Operating ratio	Net from railway operation	Net railway operating income			
		Freight	Passenger	Total (inc. misc.)	Maintenance of way and structures	Equipment	Traffic	Trans-shipment			Total	Operating income	After depreciation 1937	Before depreciation 1936
Akron, Canton & Youngstown .....	171	\$165,729	\$48	\$174,190	\$26,337	\$19,748	\$11,115	\$58,789	\$123,720	71.0	\$50,470	\$45,377	\$24,447	\$29,091
Alton .....	171	\$163,380	430	1,661,809	244,945	164,171	90,694	357,711	1,087,147	65.4	574,662	464,874	271,669	312,082
Alton .....	936	1,040,166	196,554	1,430,946	279,478	223,578	55,032	557,471	1,179,311	82.4	2,980,561	1,970,771	7,901	38,521
Alton .....	956	9,152,980	1,777,466	12,660,270	1,834,587	1,985,966	451,997	4,815,863	9,679,709	76.5	2,980,561	2,170,216	580,314	847,048
Atchison, Topeka & Santa Fe System .....	13,540	10,873,377	1,536,626	13,577,520	2,898,457	3,484,498	430,824	5,102,219	12,266,690	90.3	1,310,830	301,713	204,081	1,194,542
Atlanta & West Point .....	13,501	104,503,347	13,406,470	128,155,277	20,504,240	29,494,516	4,011,834	45,973,643	103,722,395	81.0	24,399,296	15,162,829	14,557,241	23,111,269
Atlanta & West Point .....	93	102,548	25,737	155,277	18,406	33,001	8,270	63,533	133,975	86.3	21,202	8,169	-6,505	1,907
Atlanta & West Point .....	93	916,636	233,909	1,365,322	179,230	285,748	77,987	552,455	1,196,177	87.6	169,145	100,728	-22,203	54,896
Western of Alabama .....	133	96,152	28,057	124,209	20,242	33,241	7,589	54,102	124,549	79.3	32,583	7,868	10,863	16,379
Atlanta, Birmingham & Coast .....	133	877,725	230,753	1,275,601	174,102	313,051	70,127	472,048	1,119,493	87.8	156,108	58,826	83,952	193,514
Atlanta, Birmingham & Coast .....	639	230,647	8,881	270,306	46,109	54,378	22,795	109,786	257,341	95.2	12,965	-13,135	-27,885	-16,966
Atlanta, Birmingham & Coast .....	639	2,361,759	163,971	2,823,412	457,174	498,983	216,496	1,082,548	2,496,822	88.4	326,590	133,902	-16,157	84,105
Atlantic Coast Line .....	5,100	2,471,672	398,824	3,302,032	378,847	800,157	139,532	1,363,153	2,794,666	84.6	507,366	207,366	244,525	411,258
Atlantic Coast Line .....	5,102	26,434,741	6,369,365	36,616,494	3,677,436	6,961,535	1,265,044	13,958,145	27,479,638	75.0	9,136,856	5,286,856	4,219,326	5,737,836
Charleston & Western Carolina .....	342	187,277	10,866	1,927,439	245,789	311,414	63,319	609,488	1,283,442	66.6	643,997	448,997	399,465	455,280
Atlantic Coast Line .....	342	1,867,514	10,866	1,927,439	245,789	311,414	63,319	609,488	1,283,442	66.6	643,997	448,997	399,465	455,280
Atlantic Coast Line .....	342	1,867,514	10,866	1,927,439	245,789	311,414	63,319	609,488	1,283,442	66.6	643,997	448,997	399,465	455,280
Baltimore & Ohio .....	6,450	12,661,825	1,026,946	14,600,133	1,644,347	2,689,629	419,283	5,164,774	10,508,869	72.0	4,091,264	3,204,999	2,796,130	3,403,002
Baltimore & Ohio .....	6,464	114,876,395	8,843,848	131,445,240	13,412,825	29,731,872	3,703,814	45,764,310	98,530,589	75.0	32,914,651	24,512,341	21,146,578	26,270,904
Baltimore & Ohio .....	23	447,385	641,574	1,173,177	116,491	203,127	14,469	741,069	1,179,093	100.5	-5,916	-194,916	-22,382	-20,212
Baltimore & Ohio .....	23	447,385	641,574	1,173,177	116,491	203,127	14,469	741,069	1,179,093	100.5	-5,916	-194,916	-22,382	-20,212
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Baltimore & Ohio .....	23	447,385	641,574											



## NO. 40 OF A SERIES OF FAMOUS ARCHES OF THE WORLD



## PERCÉ ROCK

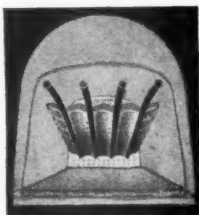
### PERCÉ, QUEBEC

Without doubt, the most celebrated natural arch in Canada, and one of the finest in the world, is the arch that gives the name to the famous Pierced Rock of Gaspé and to the attractive village on the shore . . . When Jacques Cartier discovered Canada more than four hundred years ago, it was to Gaspé he came. The great rock that rides at anchor in the Gulf of St. Lawrence had two arches in those days, but the weather of centuries wore away the roof of one of them and gave the big rock a little postscript . . . The arch that's left is sixty feet high. It is bored clean through the

massive rock toward the sea end . . . Percé Rock 1,500 feet long, glorious in size, shape and color, is one of the wonders of Canada. Thousands of tourists see it every summer with the other splendors of the Gaspé Coast. This country, famous not only for its natural scenery and its Quebec habitant life, is well known for its salmon and trout fishing and its hunting—from snipe and geese to moose, caribou and bear . . . It is reached by the Canadian National Railways, passengers transferring at Matapedia from the luxurious *Ocean Limited* or *Maritime Express*.

**HARBISON-WALKER  
REFRACTORIES CO.**

***Refractory Specialists***



**AMERICAN ARCH CO.  
INCORPORATED**

***Locomotive Combustion  
Specialists*** " " "

## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1937—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from operation	Net railway operating income	
		Freight	Passenger (inc. misc.)	Total	Way and structures	Equipment	Traffic	Trans- portation	Total			Operating income 1937	Before de- preciation 1936
Chicago, Milwaukee, St. Paul & Pac. .... Sept. 11,116	8,064,482	28,754	335,426	364,180	42,165	30,830	19,000	130,014	249,233	74.3	86,237	62,363	2,993
Chicago, Milwaukee, St. Paul & Pac. .... 9 mos. 11,114	8,064,482	282,930	3,615,281	4,498,211	478,297	342,843	166,369	1,244,366	2,472,463	68.4	1,142,818	987,219	410,053
Chicago, Milwaukee, St. Paul & Pac. .... 9 mos. 1,648	1,498,332	139,424	1,769,613	1,908,037	249,452	132,535	39,347	739,153	1,408,951	79.1	360,662	242,301	187,956
Chicago, Rock Island & Pacific. .... Sept. 7,514	5,170,431	6,322,778	1,032,562	7,355,340	1,996,452	2,670,005	330,293	6,373,429	12,045,541	90.1	1,328,737	619,902	337,804
Chicago, Rock Island & Pacific. .... 9 mos. 7,521	47,607,050	5,674,914	58,060,498	63,735,412	9,077,371	11,597,207	2,044,236	23,539,476	49,247,394	84.8	8,813,104	5,642,982	2,853,163
Chicago, Rock Island & Pacific. .... 9 mos. 7,521	47,607,050	5,674,914	58,060,498	63,735,412	9,077,371	11,597,207	2,044,236	23,539,476	49,247,394	84.8	8,813,104	5,642,982	2,853,163
Chicago, Rock Island & Pacific. .... Sept. 626	204,974	28,754	335,426	364,180	42,165	30,830	19,000	130,014	249,233	74.3	86,237	62,363	2,993
Chicago, St. Paul, Minn. & Omaha. .... Sept. 626	2,458,332	282,930	3,615,281	4,498,211	478,297	342,843	166,369	1,244,366	2,472,463	68.4	1,142,818	987,219	410,053
Chicago, St. Paul, Minn. & Omaha. .... 9 mos. 1,648	1,498,332	139,424	1,769,613	1,908,037	249,452	132,535	39,347	739,153	1,408,951	79.1	360,662	242,301	187,956
Clinchfield Railroad. .... Sept. 308	542,290	4,492	552,070	556,562	47,426	111,923	18,155	110,042	302,303	54.8	249,767	219,767	213,057
Clinchfield Railroad. .... 9 mos. 308	5,140,605	41,185	5,236,833	5,278,018	403,066	1,026,538	167,344	998,697	2,731,176	52.2	2,505,657	2,118,644	1,853,489
Colorado & Southern. .... Sept. 796	623,026	52,525	732,031	784,556	77,934	120,445	15,857	238,672	500,080	68.3	231,951	132,828	106,163
Colorado & Southern. .... 9 mos. 850	5,023,188	345,800	5,871,271	6,417,071	636,793	1,135,972	127,486	2,264,263	4,453,655	75.9	1,417,616	890,324	674,978
Ft. Worth & Denver City. .... Sept. 902	466,262	66,317	524,698	591,015	69,631	84,106	18,816	183,241	391,004	74.5	133,694	96,101	44,027
Ft. Worth & Denver City. .... 9 mos. 902	5,181,797	493,082	5,674,879	6,167,961	471,968	813,148	164,864	1,665,956	3,428,484	61.7	2,131,757	1,878,427	1,489,772
Columbus & Greenville. .... Sept. 167	95,623	8,798	104,421	113,219	24,240	14,005	4,184	41,341	55,486	83.6	18,511	7,722	6,290
Columbus & Greenville. .... 9 mos. 167	826,342	75,522	901,864	977,386	220,051	134,995	36,642	342,462	832,305	87.0	124,632	41,620	13,976
Delaware & Hudson. .... Sept. 830	178,934	133,328	2,012,803	2,146,131	333,152	563,268	45,497	749,445	1,805,975	89.7	1,805,975	1,805,975	1,805,975
Delaware & Hudson. .... 9 mos. 830	17,481,162	927,454	19,216,840	20,144,294	2,595,475	4,579,715	415,998	6,915,755	15,621,930	81.3	3,594,910	2,441,125	2,330,476
Delaware, Lackawanna & Western. .... Sept. 985	2,765,221	607,951	3,878,056	4,486,007	308,867	729,516	111,839	1,838,542	3,109,942	80.2	338,743	371,730	343,132
Delaware, Lackawanna & Western. .... 9 mos. 985	28,264,162	5,300,406	37,882,199	43,184,605	3,207,763	6,770,674	1,046,597	16,960,591	29,395,189	77.6	8,487,010	4,647,010	4,498,005
Denver & Rio Grande Western. .... Sept. 2,576	2,610,141	169,423	2,899,613	3,069,036	415,430	679,862	62,503	1,017,316	2,195,927	75.7	703,686	484,609	338,151
Denver & Rio Grande Western. .... 9 mos. 2,576	17,331,404	1,255,449	19,586,853	20,842,302	2,597,443	5,883,104	544,680	7,237,785	18,420,523	94.0	1,176,920	272,923	746,963
Denver & Salt Lake. .... Sept. 232	264,555	6,025	270,580	276,605	54,663	57,330	2,583	72,904	122,430	68.5	88,306	55,510	49,809
Denver & Salt Lake. .... 9 mos. 232	1,700,063	61,990	1,848,452	1,910,442	360,078	491,816	21,908	532,652	1,470,187	79.5	378,265	153,846	508,323
Detroit & Mackinac. .... Sept. 242	76,923	3,359	88,722	92,081	11,575	18,274	962	25,806	60,495	68.2	28,227	25,102	18,856
Detroit & Mackinac. .... 9 mos. 242	769,233	29,489	827,433	856,922	124,520	139,646	8,669	230,115	522,300	77.7	150,133	123,640	79,702
Detroit & Toledo Shore Line. .... Sept. 50	277,271	.....	277,271	277,271	24,429	23,651	8,077	73,459	137,189	49.2	141,465	112,798	67,602
Detroit & Toledo Shore Line. .... 9 mos. 50	2,818,113	.....	2,818,113	2,818,113	212,189	212,189	72,530	706,457	1,281,393	45.2	1,554,610	1,269,675	801,422
Detroit, Toledo & Ironton. .... Sept. 472	470,558	304	511,689	512,193	75,155	84,447	11,764	127,735	319,833	62.5	191,836	157,325	120,550
Detroit, Toledo & Ironton. .... 9 mos. 472	5,601,262	2,563	5,855,254	5,857,817	693,902	765,783	104,598	1,271,317	3,015,971	51.5	2,839,283	2,323,215	1,816,327
Duluth, Missabe & Iron Range. .... Sept. 538	3,305,997	2,572	3,783,507	3,786,084	204,744	274,454	4,277	572,733	1,083,263	28.6	2,700,244	2,183,645	2,180,958
Duluth, Missabe & Iron Range. .... 9 mos. 538	20,860,255	22,484	23,999,877	24,022,361	1,704,864	2,307,749	36,258	3,659,162	8,079,220	33.7	15,920,657	12,992,284	12,972,736
Duluth, Winnipeg & Pacific. .... Sept. 178	109,191	2,369	116,522	118,891	27,035	20,220	2,114	46,799	99,852	85.7	16,670	11,348	643
Duluth, Winnipeg & Pacific. .... 9 mos. 178	1,031,873	18,441	1,080,314	1,098,755	209,290	169,219	18,561	430,266	864,932	80.1	215,382	144,704	15,585
Elgin, Joliet & Eastern. .... Sept. 434	1,717,767	29	1,958,151	1,958,180	190,062	377,407	14,796	689,800	1,302,827	66.5	5,981,176	4,920,957	3,788,762
Elgin, Joliet & Eastern. .... 9 mos. 434	15,592,896	96	17,786,036	17,941,932	1,481,541	3,590,513	130,505	6,205,143	11,804,860	66.4	5,981,176	4,920,957	3,788,762
Erle. .... Sept. 2,277	5,836,693	450,363	6,843,214	7,293,577	705,754	1,372,111	176,810	2,642,944	5,142,525	75.1	1,700,689	1,340,420	982,970
Erle. .... 9 mos. 2,281	55,268,810	4,018,379	64,614,185	68,632,564	5,635,098	12,577,819	1,570,579	23,513,554	45,857,305	71.0	18,756,880	14,530,555	11,732,983
New Jersey & New York. .... Sept. 45	13,954	43,226	59,848	73,802	5,616	15,429	478	46,727	69,441	116.0	1,807,411	1,114,683	882,941
New Jersey & New York. .... 9 mos. 45	136,530	401,631	559,528	961,159	48,355	134,175	4,770	424,718	625,586	118.8	66,058	123,236	254,760
New York, Susq. & Western. .... Sept. 143	200,936	25,300	238,386	263,686	31,759	28,000	3,594	106,487	183,722	77.1	54,664	28,600	6,522
New York, Susq. & Western. .... 9 mos. 143	2,115,286	220,107	2,441,190	2,661,297	210,321	204,266	36,865	1,016,421	1,632,891	66.9	869,028	547,607	273,846
Florida East Coast. .... Sept. 684	299,373	187,266	449,125	636,391	87,697	145,787	18,801	185,033	487,519	108.5	1,807,411	1,114,683	882,941
Florida East Coast. .... 9 mos. 684	4,095,271	2,286,056	7,129,789	8,914,840	891,480	1,356,697	198,667	2,383,539	5,322,378	74.6	1,807,411	1,114,683	882,941
Georgia Railroad. .... Sept. 329	273,457	16,445	321,100	337,545	50,304	57,055	20,868	126,545	269,710	84.0	51,390	37,045	45,788
Georgia Railroad. .... 9 mos. 329	2,460,278	139,454	2,839,553	3,244,007	334,501	540,193	171,473	1,171,808	2,335,497	82.3	504,056	445,209	531,202
Georgia & Florida. .... Sept. 407	54,562	2,852	101,272	108,134	24,594	20,795	8,131	39,101	98,304	97.1	2,968	112	922
Georgia & Florida. .... 9 mos. 407	966,215	23,731	1,026,515	1,050,246	225,280	171,316	78,402	359,719	887,237	86.4	139,278	74,573	45,771
Grand Trunk Western. .... Sept. 1,032	1,559,052	99,375	1,807,361	1,906,736	251,174	366,513	40,089	851,576	1,584,108	87.6	223,253	164,622	42,324
Grand Trunk Western. .... 9 mos. 1,032	16,375,173	806,394	18,564,860	19,371,254	2,228,493	3,401,695	354,422	7,433,047	14,174,901	76.4	4,389,959	3,419,939	2,128,791
Canadian Nat'l Lines in New Eng. .... Sept. 172	100,534	9,627	128,603	138,230	38,603	19,342	2,527	58,537	123,736	102.0	2,507	12,370	43,180
Canadian Nat'l Lines in New Eng. .... 9 mos. 172	951,664	69,323	1,117,490	1,286,813	291,343	203,293	22,516	581,114	1,163,412	104.1	45,922	165,157	446,437
Great Northern. .... Sept. 8,093	10,583,702	482,727	11,952,314	12,435,041	1,186,280	1,378,997	187,583	3,008,281	6,025,964	50.4	5,926,350	4,658,769	4,415,416
Great Northern. .... 9 mos. 8,093	62,846,752	3,867,261	73,136,857	77,004,118	8,150,514	11,769,216	1,713,971	22,943,905	46,991,303	64.3	26,145,554	19,839,308	18,952,090

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# Flow of Steam to the Cylinders ... through the SUPERHEATER

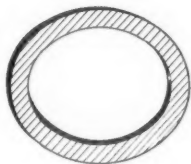
## Cross-Sectional Area of Superheater Unit Tube

1½-in. O.D. Units, #10 B.W.G. Thick



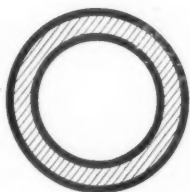
Correct Shape (1)

Full Area—1.14 sq. in.



Flattened 1/8"

Effective Area—1.1163 sq. in., or a  
2.1% Reduction



1/16" Welding

Effective Area—0.9144 sq. in., or a  
19.8% Reduction

(1) Steam areas through Elesco Superheater Units, whether new or REmanufactured, are full and unobstructed in their entirety. Have unserviceable superheater units REmanufactured—NOT REPAIRED.

## THE SUPERHEATER COMPANY

Representative of AMERICAN THROTTLE COMPANY, INC.

60 East 42nd Street, NEW YORK

Peoples Gas Building, CHICAGO

Canada: THE SUPERHEATER COMPANY, LTD., MONTREAL



A-1187

Superheaters « Exhaust Steam Injectors « Feed Water Heaters « American Throttles « Pyrometers « Steam Dryers



## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1937—CONTINUED

REVENUES AND EXPENSES OF RAILWAYS											
MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1937—CONTINUED											
Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net railway operating income
		Freight	Passenger	(inc. misc.)	Total	Maintenance of way and structures	Equipment	Traffic	Trans- portation		
Green Bay & Western.....	234	\$160,146	\$597	\$166,726	\$20,901	\$13,891	\$6,211	\$52,560	\$95,665	57.3	\$71,061
Sept. 9 mos.	234	1,249,893	6,008	1,303,486	273,084	148,597	57,940	427,476	943,410	72.3	220,078
Sept. 9 mos.	259	1,118,225	8,629	1,338,918	219,912	20,275	2,480	65,133	114,461	82.4	285,672
Sept. 9 mos.	259	995,772	88,297	1,220,362	193,746	167,788	27,621	561,520	999,024	81.9	24,457
Gulf & Ship Island.....	936	578,328	27,532	631,081	92,398	94,434	40,016	171,730	433,390	68.67	197,691
Sept. 9 mos.	936	5,251,700	571,673	5,823,373	804,652	804,652	347,323	1,545,799	3,697,359	64.68	2,019,374
Sept. 9 mos.	4,956	6,780,219	8,121,837	14,902,056	1,888,044	1,888,044	1,667,338	2,888,332	5,405,298	66.6	2,019,374
Sept. 9 mos.	4,960	59,381,817	7,290,678	72,714,937	7,428,512	15,660,773	1,865,268	28,521,403	57,015,404	78.4	15,699,533
Gulf, Mobile & Northern.....	1,619	1,428,081	90,998	1,609,432	87,071	171,559	27,055	524,813	858,963	53.4	750,469
Sept. 9 mos.	1,619	10,372,161	762,942	11,135,103	987,970	1,849,955	301,878	4,429,264	8,068,561	67.7	3,856,903
Sept. 9 mos.	6,576	8,208,300	881,292	9,089,592	742,091	1,559,603	193,793	3,413,145	6,264,961	64.4	3,467,043
Sept. 9 mos.	6,579	69,753,978	8,053,620	84,640,021	8,416,482	17,510,728	2,167,146	32,950,667	65,083,585	76.9	19,556,436
Yazoo & Mississippi Valley.....	504	419,963	66,666	536,383	34,357	70,053	16,490	166,986	307,625	57.35	228,758
Sept. 9 mos.	504	3,645,666	641,038	4,286,704	479,843	657,438	145,722	1,491,476	2,945,542	63.07	1,724,786
Sept. 9 mos.	878	1,118,983	23,261	1,250,826	126,381	185,334	48,824	350,412	769,537	61.5	481,289
Sept. 9 mos.	878	9,394,319	1,137	2,780,067	277,172	231,537	6,884	3,093,641	6,740,145	63.8	3,831,425
Illinois Central.....	326	221,688	499	225,165	31,894	16,189	9,196	44,010	107,632	47.8	117,533
Sept. 9 mos.	326	1,740,949	5,011	1,745,960	220,895	137,923	79,825	391,019	831,767	46.9	941,547
Sept. 9 mos.	125	473,999	1,137	2,780,067	277,172	231,537	6,884	3,093,641	6,740,145	63.8	3,831,425
Sept. 9 mos.	156	2,365,979	1,137	2,780,067	277,172	231,537	6,884	3,093,641	6,740,145	63.8	3,831,425
Kansas City Southern.....	96	128,478	2,960	1,230,302	316,296	39,558	4,172	43,210	862,208	69.7	39,328
Sept. 9 mos.	96	1,230,302	2,960	1,233,262	150,441	188,798	35,639	422,190	862,208	69.5	377,823
Sept. 9 mos.	215	2,765,355	1,591	2,780,067	277,172	231,537	6,884	3,093,641	6,740,145	75.8	673,650
Sept. 9 mos.	215	2,765,355	1,591	2,780,067	277,172	231,537	6,884	3,093,641	6,740,145	75.8	673,650
Lehigh & Hudson River.....	1,320	3,276,297	234,213	3,780,375	189,229	750,588	115,123	1,603,198	2,802,926	74.1	977,449
Sept. 9 mos.	1,321	32,588,582	1,994,661	36,919,124	2,471,467	7,508,853	1,021,493	15,751,153	28,177,135	76.3	8,741,989
Sept. 9 mos.	606	4,162,909	85,339	4,403,878	578,637	71,933	638,472	286,727	2,954,510	67.1	1,449,368
Sept. 9 mos.	606	4,162,909	85,339	4,403,878	578,637	71,933	638,472	286,727	2,954,510	67.1	1,449,368
Louisiana & Arkansas.....	355	120,625	236	126,786	22,044	13,153	5,654	54,030	101,000	79.7	25,782
Sept. 9 mos.	355	943,737	2,060	945,797	192,140	98,947	46,634	370,690	731,335	75.9	239,192
Sept. 9 mos.	4,940	6,631,655	612,576	7,244,231	7,252,102	862,963	1,777,504	4,434,342	5,754,432	74.5	1,970,670
Sept. 9 mos.	4,941	58,127,350	5,337,151	68,070,361	7,385,563	15,377,994	1,695,471	23,573,787	50,819,861	74.7	17,250,500
Louisiana, Arkansas & Texas.....	1,009	814,715	101,035	1,023,030	169,450	176,184	13,864	364,766	762,806	74.6	260,224
Sept. 9 mos.	1,009	7,972,078	827,492	9,577,441	1,527,330	1,591,666	112,519	3,284,849	6,876,441	71.8	2,701,089
Sept. 9 mos.	351	1,110,093	102	1,131,365	160,117	108,332	22,687	280,366	625,100	55.3	506,265
Sept. 9 mos.	351	1,110,093	102	1,131,365	160,117	108,332	22,687	280,366	625,100	55.3	506,265
Midland Valley.....	1,530	824,304	11,567	835,871	131,392	110,499	41,101	295,295	616,324	70.6	257,120
Sept. 9 mos.	1,530	5,868,534	102,700	6,286,146	951,813	1,056,834	373,506	2,601,878	5,323,064	62.8	963,082
Sept. 9 mos.	1,530	2,735,856	108,006	3,056,408	348,936	389,116	59,209	1,015,263	1,918,386	62.8	963,082
Sept. 9 mos.	4,301	18,642,125	1,037,380	21,396,173	2,960,643	3,693,880	545,976	8,538,646	16,681,760	78.0	4,714,413
Minneapolis & St. Louis.....	549	193,438	138,833	228,271	120,889	137,702	7,913	19,239	71,311	65.9	94,812
Sept. 9 mos.	549	1,934,388	138,833	2,268,221	186,639	172,607	103,604	63,754	190,552	78.5	115,009
Sept. 9 mos.	163	79,858	13,042	93,899	219,896	219,896	112,339	52,843	301,899	71.3	23,463
Sept. 9 mos.	163	79,858	13,042	93,899	219,896	219,896	112,339	52,843	301,899	71.3	23,463
Duluth, South Shore & Atlantic.....	150	87,334	23,847	111,181	18,639	18,639	7,151	24,568	66,258	68.7	42,467
Sept. 9 mos.	150	656,472	23,847	701,968	172,607	103,604	63,754	190,552	586,959	67.8	370,981
Sept. 9 mos.	364	94,961	11,085	106,046	219,896	219,896	112,339	52,843	301,899	71.3	23,463
Sept. 9 mos.	364	94,961	11,085	106,046	219,896	219,896	112,339	52,843	301,899	71.3	23,463
Mississippi Central.....	193	133,448	5,326	138,774	110,499	110,499	41,101	295,295	616,324	70.6	257,120
Sept. 9 mos.	193	1,126,571	211,974	2,929,943	381,094	475,632	129,800	1,107,830	8,667,345	74.2	6,238,205
Sept. 9 mos.	3,293	20,265,526	1,737,429	24,191,568	3,025,312	3,667,457	1,533,556	2,229,577	53,201,667	76.3	16,532,023
Sept. 9 mos.	3,293	20,265,526	1,737,429	24,191,568	3,025,312	3,667,457	1,533,556	2,229,577	53,201,667	76.3	16,532,023
Missouri-Illinois.....	7,171	6,651,604	491,543	7,772,154	1,147,067	1,147,067	1,533,556	2,229,577	53,201,667	76.3	16,532,023
Sept. 9 mos.	7,171	59,865,091	4,234,782	69,733,690	9,779,583	9,779,583	13,253,686	25,227,397	53,201,667	76.3	16,532,023
Sept. 9 mos.	7,171	59,865,091	4,234,782	69,733,690	9,779,583	9,779,583	13,253,686	25,227,397	53,201,667	76.3	16,532,023
Missouri-Kansas-Texas Lines.....	981,964	877,967	9,114,562	1,224,834	1,324,834	1,324,834	1,324,834	1,324,834	1,324,834	877,967	9,114,562
Sept. 9 mos.	981,964	877,967	9,114,562	1,224,834	1,324,834	1,324,834	1,324,834	1,324,834	1,324,834	877,967	9,114,562
Sept. 9 mos.	981,964	877,967	9,114,562	1,224,834	1,324,834	1,324,834	1,324,834	1,324,834	1,324,834	877,967	9,114,562
Sept. 9 mos.	981,964	877,967	9,114,562	1,224,834	1,324,834	1,324,834	1,324,834	1,324,834	1,324,834	877,967	9,114,562
Missouri Pacific.....	1,233,780	12,258,222	2,179,832	14,438,054	2,179,832	2,179,832	2,179,832	2,179,832	2,179,832	1,233,780	12,258,222
Sept. 9 mos.	1,233,780	12,258,222	2,179,832	14,438,054	2,179,832	2,179,832	2,179,832	2,179,832	2,179,832	1,233,780	12,258,222
Sept. 9 mos.	1,233,780	12,258,222	2,179,832	14,438,054	2,179,832	2,179,832	2,179,832	2,179,832	2,179,832	1,233,780	12,258,222
Sept. 9 mos.	1,233,780	12,258,222	2,179,832	14,438,054	2,179,832	2,179,832	2,179,832	2,179,832	2,179,832	1,233,780	12,258,222

# Why

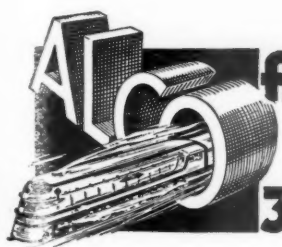
## MAKE HEAVY CAPITAL EXPENDITURES WHEN ALCO IS ALREADY EQUIPPED?



**L**IGHT-WEIGHT alloy steel forgings present many new manufacturing problems necessitating not only a complete revamping of shop facilities—but a change in personnel as well.

The manufacture of high grade steel forgings is and always has been one of Alco's important specialties . . . And now with our plant facilities completely remodeled from end to end to make the finest light-weight alloy steel forgings, Alco is in a position to serve you better than ever before.

We urge you, therefore, in the face of rising costs to investigate thoroughly Alco's service. Why make huge expenditures and train a new personnel in order to duplicate Alco's complete line of special equipment—and possibly then only work it part of the time? We are sure that our modern facilities plus our skilled personnel can serve you better and at a much lower all-around cost.



### AMERICAN LOCOMOTIVE COMPANY

### 30 CHURCH STREET • NEW YORK • N.Y.



## REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1937—CONTINUED

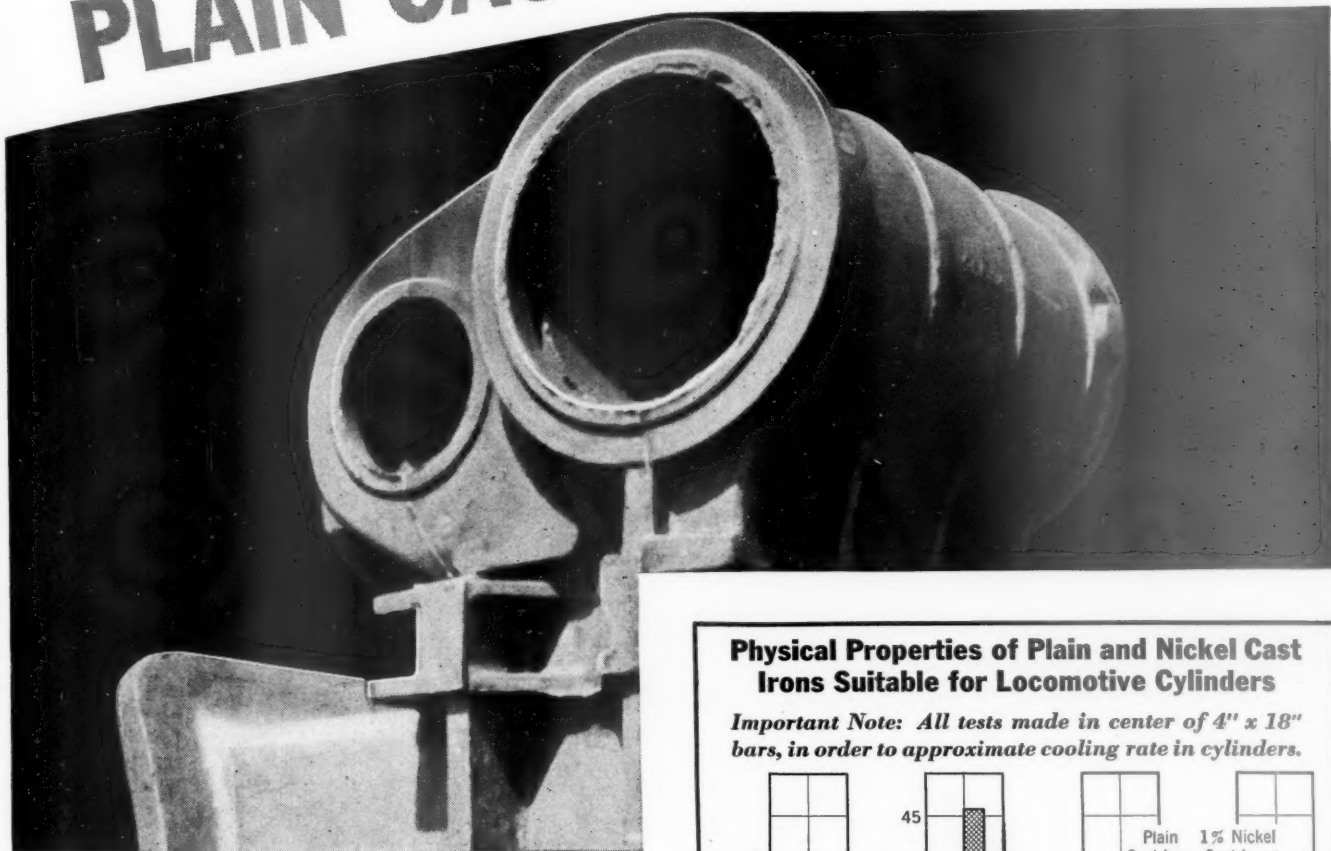
Name of road	Av. mileage operated during period	Operating revenues				Operating expenses				Operating ratio	Net from railway operation	Net railway operating income	
		Freight	Passenger (inc. misc.)	Total	Maintenance of way and structures	Traffic	Trans- portation	Total				Operating income	Before depreciation
Gulf Coast Lines	1,763	\$868,555	\$49,463	\$918,018	\$201,760	\$239,239	\$344,873	\$851,743	87.14	139,154	83,587	\$64,841	\$38,493
International-Great Northern	1,154	7,996,022	846,297	8,842,319	1,408,843	287,687	4,141,838	8,188,525	82.92	1,686,698	1,367,601	3,054,200	3,029,901
Mobile & Ohio	1,194	912,748	38,918	951,666	151,702	43,114	340,140	864,518	86.1	139,154	83,587	\$64,841	\$38,493
Monongahela	1,171	8,341,050	312,307	8,653,357	1,160,808	390,011	3,300,296	7,210,777	78.5	1,970,906	1,430,748	3,401,654	3,393,901
Montour	56	1,936,481	11,135	1,947,616	128,482	60,161	458,026	1,065,262	91.9	884,651	627,208	1,511,859	1,509,087
Nashville, Chattanooga & St. Louis	1,117	9,438,836	92,422	9,531,258	1,360,613	568,518	4,253,829	9,330,357	84.8	1,668,924	995,025	2,663,949	2,651,304
Nevada Northern	165	49,729	1,579	51,308	18,430	996	56,060	132,838	54.7	109,852	76,305	104,850	118,889
New York Central	1,173	20,760,863	5,998,106	26,758,969	4,144,810	587,599	11,484,586	24,127,363	78.8	6,476,076	4,340,817	10,816,893	10,797,761
Pittsburgh & Lake Erie	233	1,944,734	54,997	1,999,731	262,226	27,346	617,156	1,547,181	74.4	533,013	353,332	576,050	579,668
New York, Chicago & St. Louis	1,704	3,211,155	304,564	3,515,719	1,639,430	250,040	5,652,941	14,661,341	78.6	3,993,594	2,356,455	6,350,049	6,343,556
New York, New Haven & Hartford	2,033	3,713,292	2,499,608	6,212,900	1,075,429	124,947	2,693,597	5,674,406	80.9	1,337,689	872,689	2,210,378	2,202,689
New York Connecting	20	1,881,063	.....	1,881,063	136,990	70,423	.....	255,655	37.4	1,516,373	1,178,438	337,935	337,935
New York, Ontario & Western	576	362,534	71,048	433,582	70,802	124,066	253,155	483,319	99.7	1,328	28,420	62,551	62,551
Norfolk & Western	2,201	6,818,866	1,704,361	8,523,227	7,793,730	1,209,646	16,116,340	40,353,096	55.6	32,237,096	21,625,881	53,862,977	53,836,531
Norfolk Southern	830	373,870	8,807	382,677	82,269	24,426	149,252	330,217	82.8	68,407	33,002	140,121	140,121
Norfolk Pacific	6,726	5,873,025	3,549,062	9,422,087	602,764	1,194,865	2,201,445	4,395,462	66.0	2,294,597	1,698,946	3,993,543	3,986,573
Northwestern Pacific	351	266,650	65,677	332,327	63,562	58,280	180,456	317,655	88.7	40,336	20,692	7,266	7,266
Oklahoma City-Ada-Atoka	132	364,306	4,183	368,489	103,321	18,232	11,455	23,046	54.0	19,593	16,035	3,558	3,558
Pennsylvania	10,308	29,127,516	6,308,417	35,435,933	4,175,252	697,772	13,291,998	27,476,795	70.0	11,771,139	7,680,169	19,451,308	19,451,308
Long Island	396	4,795,041	13,363,406	18,158,447	2,030,991	175,553	8,809,116	15,171,982	79.6	3,891,582	1,405,766	5,297,348	5,297,348
Pennsylvania-Reading Seashore Lines	412	257,111	324,060	581,171	72,862	81,875	361,051	543,720	89.0	67,146	32,020	152,552	152,552
Pere Marquette	2,115	21,897,262	839,553	22,736,815	3,163,711	5,162,793	8,709,781	18,544,476	76.5	5,692,434	4,445,753	10,138,187	10,138,187
Pittsburgh & Shawmut	100	470,750	2,650	473,400	129,344	790,852	2,760,590	4,601,431	88.7	586,092	237,572	823,664	823,664
Pittsburgh & West Virginia	138	3,109,674	6,440	3,116,114	597,513	778,905	676,393	2,427,293	74.4	833,794	633,553	1,467,347	1,467,347
Pittsburg, Shawmut & Northern	190	75,591	19	75,610	16,948	22,079	24,099	70,658	91.5	6,541	1,689	5,852	5,852
Reading	1,452	40,309,807	2,655,881	42,965,688	3,489,274	8,186,649	17,087,002	31,169,868	69.1	13,912,147	10,314,263	24,226,410	24,226,410
Richmond, Fredericksburg & Potomac	117	300,936	179,909	480,845	112,378	138,337	219,854	517,536	85.7	86,695	40,634	127,329	127,329

Continued on next left-hand page



# NICKEL CAST IRON VS. PLAIN CAST IRON

*This  
5-ton locomotive  
cylinder casting  
tells the story*



**T**HE improved properties imparted to cast iron by additions of Nickel were strikingly proved in casting this 10,000 lb. cylinder, one of a pair recently produced in the shops of a well-known railroad.

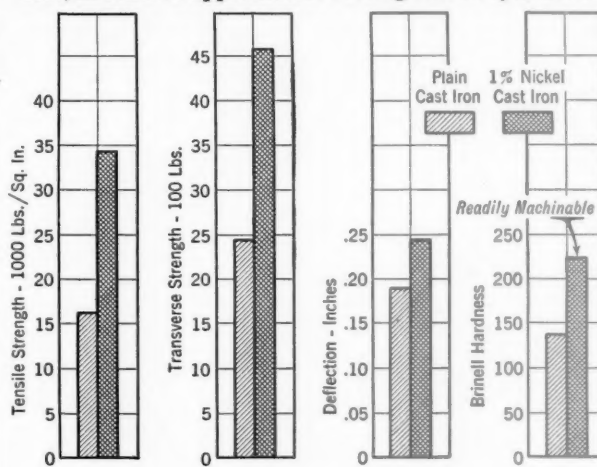
Special 4" diameter x 18" test bars were made from both the standard plain cast iron and from the 1.00-1.25% Nickel Cast Iron composition used for these cylinders. The bars were then subjected to a series of tests both by The International Nickel Company research laboratories and those of the railroad company.

Object: to determine the relative tensile strength, transverse strength, Brinell hardness and microstructure. Results from both tests were in substantial agreement and are shown in the box at the right.

The superior strength and hardness of Nickel Cast Iron are clearly demonstrated here and indicate why

## Physical Properties of Plain and Nickel Cast Irons Suitable for Locomotive Cylinders

*Important Note: All tests made in center of 4" x 18" bars, in order to approximate cooling rate in cylinders.*



more and more railroads are turning to this material for cylinders and other applications demanding strength, high wear resistance and pressure tightness.

Our casting specialists will gladly recommend suitable applications and compositions.

**THE INTERNATIONAL NICKEL COMPANY, INC., 67 WALL ST., NEW YORK, N. Y.**

REVENUES AND EXPENSES OF RAILWAYS

MONTH OF SEPTEMBER AND NINE MONTHS OF CALENDAR YEAR 1937—CONTINUED

Name of road	Av. mileage operated during period	Operating revenues			Operating expenses			Operating ratio	Net from railway operation	Net railway operating income			
		Freight	Passenger	Total (inc. misc.)	Way and structures	Maintenance of equipment	Traffic			Trans- portation	Total	After depreciation— 1937 1936	Before de- preciation
Rutland .....	407	\$187,571	\$41,844	\$229,415	\$52,942	\$60,447	\$10,610	\$132,812	\$272,612	92.2	\$23,130	\$1,168	\$24,494
St. Louis-San Francisco .....	4,896	3,577,235	327,440	3,904,675	384,277	537,720	96,598	2,288,684	3,567,832	90.8	248,699	50,003	55,414
St. Louis, San Francisco & Texas .....	4,920	3,676,068	2,830,156	6,506,224	4,246,882	996,131	112,249	1,592,097	3,505,232	82.5	741,650	47,702	711,399
St. Louis, San Francisco & Texas .....	261	104,635	772	111,965	28,904	15,534	7,794	54,947	30,982,625	82.1	6,760,976	4,497,754	7,086,490
St. Louis Southwestern Lines .....	1,706	1,138,598	4,957	1,143,555	242,094	128,349	67,651	1,000,557	1,400,557	83.7	194,085	150,707	194,085
Seaboard Air Line .....	4,307	2,269,480	347,015	2,616,495	352,077	291,501	84,164	592,873	1,400,557	77.3	411,311	299,284	229,243
Southern Railway .....	6,639	60,886,241	7,849,013	68,735,254	2,746,467	2,726,290	702,942	5,150,752	12,036,678	75.5	3,916,137	1,634,771	2,253,839
Alabama Great Southern .....	315	531,740	63,639	595,379	441,872	696,968	155,235	1,197,008	2,679,104	90.1	294,151	54,151	363,200
Cinn., New Orleans & Texas Pacific .....	336	1,140,355	101,639	1,241,994	4,328,216	6,362,773	1,428,959	11,718,864	25,609,508	80.1	6,374,183	3,196,402	4,658,804
Georgia Southern & Florida .....	397	117,962	26,115	144,077	1,074,050	1,660,553	146,722	2,837,310	6,033,938	73.8	2,139,278	1,515,484	1,978,811
New Orleans & Northeastern .....	204	2,110,271	201,989	2,312,260	9,342,253	14,516,604	1,347,971	25,872,416	53,930,452	71.6	21,350,906	15,943,175	13,999,651
Northern Alabama .....	100	71,723	1,601	73,324	147,654	1,239,077	111,007	453,540	7,921,724	70.7	188,169	116,356	95,460
Southern Pacific .....	8,764	11,918,879	2,044,481	13,963,360	794,465	1,239,077	111,007	1,689,779	402,951	71.5	1,606,284	1,112,235	954,022
Southern Pacific Steamship Lines .....	4,420	556,268	32,025	588,293	1,379,386	2,382,041	340,353	3,819,779	840,838	62.6	503,005	344,726	391,591
Texas & New Orleans .....	4,424	2,953,753	2,756,260	5,709,913	1,580,512	2,397,800	239,424	3,220,896	7,921,724	60.3	5,219,275	4,034,832	3,808,652
Spokane, Portland & Seattle .....	946	752,257	57,721	809,978	35,836	45,117	1,785	159,677	7,921,724	90.6	16,657	—6,860	9,611
Tennessee Central .....	286	212,897	47,363	260,260	302,557	368,720	16,794	1,478,698	402,951	80.0	368,924	221,219	183,863
Texas & Pacific .....	1,936	2,008,700	251,595	2,260,295	1,379,386	2,382,041	340,353	3,819,779	1,491,308	62.8	101,568	61,485	41,537
Texas Mexican .....	162	1,017,112	4,683	1,021,795	1,580,512	2,397,800	239,424	7,921,724	635,995	60.4	978,100	635,995	465,959
Toledo, Peoria & Western .....	239	197,712	2	197,714	14,899	1,484	1,385	39,697	52.8	35,426	28,455	12,873	1,982
Union Pacific System .....	9,911	12,590,150	1,709,869	14,299,919	113,210	13,311	11,880	184,074	39,697	55.9	268,404	212,824	97,042
Utah .....	110	117,690	.....	117,690	1,379,386	2,382,041	340,353	3,819,779	10,992,938	71.9	3,508,167	3,109,800	2,334,606
Virginian .....	618	1,689,112	4,282	1,693,394	1,580,512	2,397,800	239,424	7,921,724	98,677,977	75.8	31,508,807	21,314,271	14,780,759
Wabash .....	2,433	3,338,366	239,310	3,577,676	1,580,512	2,397,800	239,424	7,921,724	652,917	106.0	—36,794	—56,271	—6,296
Western Maryland .....	879	1,434,671	8,226	1,442,897	1,580,512	2,397,800	239,424	7,921,724	5,629,232	96.8	186,909	39,302	—23,441
Western Pacific .....	1,207	1,336,618	357,363	1,693,981	1,580,512	2,397,800	239,424	7,921,724	5,629,232	96.8	186,909	39,302	—23,441
Wheeling & Lake Erie .....	512	1,348,662	2,048	1,350,710	1,580,512	2,397,800	239,424	7,921,724	5,629,232	96.8	186,909	39,302	—23,441